National Library of Canada
Canadian Theses Service
Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Services des thèses canadiennes

CANADIAN THESES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

THÈSES CANADIENNES

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS REÇUE

NL-339 (r.86/06)

Canada

UNIVERSITY OF ALBERTA

SMALL TOWN ALBERTA:
A GEOGRAPHICAL STUDY OF
THE DEVELOPMENT OF
URBAN FORM

BY

ANN HOLTZ

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND

RESEARCH IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTERS OF ARTS

DEPARTMENT OF GEOGRAPHY

EDMONTON, ALBERTA

SPRING, 1987

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-37692-9

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR Ann Holtz

TITLE OF THESIS Small Town Alberta:
A Geographical Study of the
Development of Urban Form

DEGREE FOR WHICH THESIS WAS PRESENTED: M.A.

YEAR THIS DEGREE GRANTED: 1987

Permission is hereby granted to the UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only. The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without author's written permission.

(Signed) Ann Holtz.....

PERMANENT ADDRESS:

4144 Ramsay Road,

Edmonton, Alberta

T6H 5R2

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Small Town Alberta: A Geographical Study of the Development of Urban Form submitted by Ann Holtz in partial fulfillment of the requirements for the degree of Masters of Arts.

William C Wonders
.....

Supervisor

.....

.....

Date: 10 April 87

ABSTRACT

The primary objectives of this study were to determine, through the examination of relevant townsite plans and corporate documents, the urban morphology of Alberta during a period of time from 1880 to 1939. An era of town platting came to an end with the advent of the Second World War in 1939 which saw over 500 townsites laid out by corporations, individuals and the government. Approximately 75% of all townsites in Alberta were laid out by railway companies and these town plans are the primary focus of this thesis. Non-railway townsites are also discussed.

The hypotheses state: that the urban form of Alberta was a result of corporate and federal decisions advancing their goals regarding settlement; the grid plan town represented a standardization of structure applied uniformly without consideration for site or situation; and, that contemporary planning trends had little impact on the prescribed urban form.

The methodology used to test these hypotheses involved the examination of town plans registered at the Alberta Land Titles Offices in Edmonton and Calgary. Archival research was conducted to establish the corporate and government perceptions to land subdivision. A typology of urban form was constructed.

The results show that all towns in Alberta are not laid out using the same plan form. Variations in plan types occur through time, over space, by company and by owner. Plan variations occurred primarily with respect in principal alignment to the railway and in the location of commercial areas. In the absence of standardized policy the major influence on plan was the land surveyor. Contemporary planning ideas did not have a substantial impact because of the scientific and utilitarian attitudes of the land surveyors involved.

As a result of this study, future recommendations for study are made.

ACKNOWLEDGEMENTS

First, I would like to thank Dr. William Wonders, my thesis supervisor, for his time, patience and guidance. I would like to thank Dr. D.B. Johnson and Dr. P. Voisey for their contributions, as members of my committee.

Secondly, I would like to thank the staff of the Alberta Land Titles Offices for granting access to the plans and for their assistance. I would also like to express my gratitude to David Jones of the Canadian Pacific Archives, and to the staff of the University of Alberta Archives, for their assistance.

Thirdly, I would like to thank all those who were there to hold my hand, wipe the sweat, or give me a push along the way. Without the computer help from Peter, Gordon, Art, Linda, and Miles there would be no thesis. I am grateful to Geoff Lester for sharing his railway information and map advice. Thanks go to Lillian, Jack and Randy for their map production assistance. I appreciate the assistance of K. Allred of the Alberta Land Surveyors Association. Thanks to Hilkka for the shoulder.

Finally, a word of gratitude to my husband Al who has made this thesis possible with his patience, support and hard work. Thanks go to my children, Kaila, Aleks and Matthew who have tolerated much during this project.

This thesis is dedicated to my father, Ilmar Pals ALS who as a land surveyor, taught me an appreciation for the landscape of Alberta.

TABLE OF CONTENTS

	PAGE
ABSTRACT	iv
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
CHAPTER 1: FOCUS OF RESEARCH	1
Introduction	1
Objectives	5
Hypothesis	6
Sources of Data	6
Methodology	9
CHAPTER 2: PRECEDENT AND THEMES IN VICTORIAN ERA PLANNING	14
Urban Design Traditions	15
Colonial Urban Form	19
British North America	22
Land and Speculation	25
Progressive Reform Era	27
Conclusion	28
CHAPTER 3: TOWNSITE DEVELOPMENT IN ALBERTA	32
Introduction	32
Hudson's Bay Company Reserves Survey	33
Department of Interior Townsites	37

PAGE

Canadian Pacific Railway 43
Canadian Northern Railway 53
Grand Trunk Pacific Railway 56
Surveying Instructions 65
Planning Legislation 67
Conclusion 70

CHAPTER 4: TOWNSITE FORM IN ALBERTA 77
The Geographic Setting 77
Topography and Soils 77
Climate and Biogeography 79
Prairie 79
Parkland 81
Boreal 82
Cordillera 83
Settlement Potential 83
Townsite Dynamics 85
Form 86
Discussion 87
Canadian Pacific Railway 90
The Other Transcontinentals 93
Other Railway Companies 95
Spatial and Temporal Variations 96
Plan Size 99
Unusual Railway Plans 101
Land Surveyors 104
Conclusion 93

PAGE

CHAPTER 5: NON-RAILWAY TOWNSITES IN ALBERTA 108

The Simple Grid 108

The Simple Linear 112

The Mormon Block 114

Conclusion 116

CHAPTER 6: CONCLUSION 119

Form Variations-Time 121

Form Variations-Spatial 124

Form Rationale 127

Planning Influences 128

Comparative Development 130

Conclusion 132

Research Recommendation 134

BIBLIOGRAPHY 136

APPENDIX I Inventory of Town Plans in Alberta 147

APPENDIX II GTP Standard Form Showing Restrictions 155

APPENDIX III Form Definitions 156

LIST OF TABLES

TABLE		PAGE
1	Alberta Climatic Data	80

LIST OF FIGURES

FIGURE		PAGE
1A.	Prairie Provinces Showing Hudson's Bay Company Reserves and Northwest Mounted Police Posts	
1B.	Railway Lines and Selected Place Names in Alberta	35
2.	Proposed Town Plan of Canmore	40
3.	Registered Canmore Town Plan	42
4.	Sanford Fleming's Proposed Town Plan Designs, 1877	45
5.	GTP Standard Plan Showing Building Valuation Areas	61
6.	Ecoregions of Alberta	78
7.	Railway Townsite Forms in Alberta	88
8.	Townsite-Form Along Railway Lines	89
9.	Calgary-Edmonton Railway Form Types	91
10.	Total Number of Registered Plans Filed in Alberta	97
11.	Urban Forms in Northern Alberta and Southern Alberta	98
12.	Major Land Surveyors, Number of Alberta Towns Surveyed According to Form	105
13.	Non-Railway Townsite Forms	109
14.	Spatial Distribution of Alberta Urban Form in Alberta	125

CHAPTER 1

Focus of Research

Introduction

Villages and towns are an important part of the settlement geography of Canada. They may be considered the foundation in a system of agglomerated settlements as well as the "seed bed" for urban development. A large number of villages and towns developed in response to the demands of the existing commercial hierarchy to provide basic goods and services to a population within a convenient proximity. Small centres thus exist in the larger metropolitan, provincial or national region and are subject to the forces which govern the regional economy, social development and growth prospects. At the same time, a small village or town is also the centre of its own region.

Urban centres in the Canadian West[1] can trace their roots to one of four origins: fur trade site, inland town, railway town, or highway town.[2] Fur trade posts were the nodes for early hinterland activity and were the initial centers of urban development. Inland towns developed prior to railway connections as trade centers along trails, as agricultural centres in farming areas, and near North West Mounted Police posts. The majority disappeared with the arrival of the railway due to conflicts with the railway townsite location policy. Some continued to survive and

became highway towns. The railway became the lifeblood of a town's existence, for without direct rail access, the latter's chances for survival were slim. The greatest number of towns were established by the railway companies as vehicles to capture traffic for their rail lines. Town platting became a function of railway corporate policy to implement as the company saw fit. Highway towns were places located by individuals, without rail connections, along a major road transportation system. Their locations were determined by individual site owners in response to local conditions in the post-railway period.

The study of small town development to date has been approached primarily from the historical perspective. Many studies of western towns and cities are primary accounts of events, biographies of locally important people or chronologies of community development. Urban history has provided information on urban development but tends to focus on the specific experience of particular places in order to relate the larger processes of urbanization. Urban geography to date has not provided much insight into the development process in small towns and villages and tends to focus on the upper end of the urban system in its explanation of spatial structure and form.

Urban morphology studies have enjoyed great interest in Britain and in other European countries in the past and are a subject of growing interest by North American scholars.

Urban morphology can be defined as the systematic study of the physical form of towns and cities.[3] No scholarly agreement exists on the scope, methods or even the subject matter that is covered by morphological studies. What is common in the literature is a heavy reliance on the townscape as a source of evidence. The term "townscape" has different meanings depending on the discipline. Here it is defined as the subjective image of the city.[4] Paraphrasing Conzen, urban forms are a direct outcome of the processes and are the embodiment of the attitudes pertaining at the time and in the place of their creation.[5] The role of the individual cannot be ignored in the process of morphology since many cities and towns reflect in their morphology the dreams, ambitions and foibles of individual actors.[6]

Little is known of the actual dynamics of railway townsite development in the Canadian West. When towns are mentioned in transportation studies,[7] railway histories,[8] or in historical monographs, the references are short, fairly general and rather critical. Robertson, in her history of western development, Grassroots, expresses a common perception of the Western Canadian townsite:

> Prairie towns all look alike: identical grain elevators, identical railway stations, a main street called Main Street and a road along the tracks called Railway Avenue - when you've seen one...you've seen them all.[9]

Townsite development has been viewed as a tool of the

railway to increase its traffic while profiting from land sales. Thus, the actions of the railway have been stereotyped into a general 'model' of development. The railway model of townsite development centers around land speculation, rapid land subdivision and complete control -- therefore a lack of sympathy to local conditions. In fact, this is too simplistic a generalization of the townsite development process.

Hudson in his study of North Dakota towns provides us with a framework for the observation of trends and themes in Alberta. He proposes a model of town settlement sequence employed by American railway companies which appears to be applicable to the Alberta case as well. In his model, a townsite was selected first, platted as a series of streets and blocks which were divided into lots. Once the physical structure or layout was specified, then "townlike" activities were allowed to locate there. Urban design had little impact on town layout. Rather layout was determined by the need to control development in order to organize the traffic that would come to the company.

Hudson identified three morphologies in his study region. These morphologies - symmetric, orthogonal and T-plan - provided the initial framework for the analysis of form in Alberta. Hudson notes that these three morphologies characterized the entire history of railway towns throughout North America from the 1850s to the 1920s.[10]

The non-railway townsites provide us with some of the earliest examples of townsite layout in the Canadian West. These early sites give us insight into contemporary perceptions to land and to land subdivision, prior to the arrival of the railway. If it is true that attitudes and processes influence form then the early railway townsites present a corporate reflection of the same popular perceptions within a railway setting.

Objectives

The primary objectives of this thesis are to determine, through the use of primary and secondary sources of information, the answers to the following questions:

1. What townsite development processes were established by the corporate authorities in Alberta?
2. What types of townsite plans were prepared and how did they reflect the corporate and federal rationale?
3. Did site or situation conditions influence such plans and are there spatial differences between Alberta townsite plans?

Railway towns form the major basis of the text which follows on townsite development in Alberta. The category contains the earliest and the most numerous examples of the plans registered and is the backbone of the urban structure in the province.

The fur trade and inland town plans will be discussed as part of the background information on land and

speculation in Chapter 3.

The non-railway town plans will be discussed in Chapter 5, including highway town plans and the simple grid plans.

Hypothesis

From these objectives a series of working hypothesis were established:

1. That the urban form of towns and villages in Alberta[11] was a direct result of corporate and federal decisions which would advance their goals.

2. That the grid plan town represents a standardization of internal town structure applied uniformly with little consideration for site or situation.

3. That contemporary planning trends in Britain, the United States, and eastern Canada had little impact on the design of the prescribed urban form.

The assessment of these factors yields an overall hypothesis:

> The urban form of villages and towns in Alberta was a result of regional development system designed to meet corporate and national goals.

Sources of Data

The sources of data for this thesis included registered town plans, railway corporate correspondence files, land surveys correspondence and annual reports. Registered town plans filed at the Northern Alberta and Southern Alberta Land Titles Offices were reviewed in Edmonton and Calgary

respectively in order to establish an Inventory of Townsite Plans. (Refer to Appendix I for a complete listing of the Inventory.)

Railway company documents were examined in their original form to establish the rationale and system of townsite development. The Canadian Pacific Railway correspondence (Van Horne letterbooks 1882-1887), Department of Natural Resource correspondence (1912-1930) and Canada North West Land Co. records (1882-1912) were examined. These documents were viewed at the Canadian Pacific Railway Corporate Archives in Montreal and at the Glenbow Archives in Calgary. Information relating to the Grand Trunk Pacific Development Co. correspondence, Land Department correspondence (1903-1916) and Annual Reports were examined at the Public Archives of Canada in Ottawa. Correspondence dealing with Canadian Northern Development Co., the Canadian Northern Town Properties Co. Ltd., Mackenzie, Mann Co. Ltd., Terminal Cities of Canada Ltd., and Davidson and McCrae Ltd. was examined at the Public Archives of Canada in Ottawa and at the Provincial Archives of Alberta in Edmonton. Correspondence between the Canadian Department of Interior and its Dominion Land Surveyors (1882-1920) was examined at the Provincial Archives of Alberta in Edmonton. Early files of the Alberta Department of Municipal Affairs and Alberta Department of Public Works were examined at the Provincial Archives of Alberta in Edmonton. The William Pearce Papers

were examined at the University of Alberta Archives in Edmonton.

Executive correspondence (1881-1887) between Van Horne and the officers of the CPR - Whyte, McTavish and Dennis - were reviewed for policy directives. Correspondence and agreements (1883-1912) with the Canada North West Land Company were reviewed for company policy. Similarly, correspondence between the executive officers and agents of the Grand Trunk Pacific Railway Co. and of the Canadian Northern Railway Company was reviewed for policy statements and instructions. The federal input into townsite platting was established through the review of correspondence between the Federal Department of Interior and its Dominion Land Surveyors, and with the Canadian Pacific Railway on its mainline townsites.

Secondary sources were examined regarding Mormon town planning techniques including published church documents, theses, and local history books. Secondary sources were also consulted regarding various railway company histories, Hudson's Bay Company history, western urban history, town planning and surveying in both the United States and Canada. These were examined in the libraries of the University of Alberta and the Department of Culture, Government of Alberta.

A literature review was conducted to establish the existing framework in which the settlement of the Canadian

West occurred. This literature is summarized in Chapter 2.

Methodology

Convention suggests that the townscape, as the urban equivalent of landscape, consists of three parts: the street plan or cadastre, the building fabric and the land use. It is the goal of this thesis to focus on the street plan aspect of urban morphology in order to establish the framework on which architectural styles and land use studies can rest. No clear models exist on how town plans should be analyzed, thus analysis has evolved within the traditional lines - concern with shape and with the historical components of the plan.[12] Both of these aspects have been dominated by the historical descriptive research approach. A second method uses variables such as political, cultural, economic, etc., which can shape plans. These variables can be isolated independent of any historical phase. This thesis uses both a historical descriptive approach as well as the identification of variables which have influenced form.

Because of the large volume of data, it was necessary to focus on some aspect of townsite development that would provide the most relevant information. To evaluate the plausibility of the previously noted hypothesis, an inventory was compiled of registered place plans. Plans which were registered at the Land Titles Offices during the period of 1883 to 1939 were examined in order to obtain

their incorporation date, surveyor, owner(s), railway line, plan shape and lot size. This inventory provides the framework within which research was conducted on railway lines, townsite development companies and their agents, federal policy and planning practices.

In order for lots to be sold, subdivision plans were required to be registered at the Land Titles Offices prior to the transfer of title to the new owners. Incorporation of a place as a village, town or city would then follow, depending on the appropriate Territorial Ordinance or Provincial statute. Blue in his history of Alberta entitled Alberta: Past and Present gives an excellent overview of territorial and early provincial legislation regarding village and town incorporation. Regulations for incorporation varied over time but usually included a minimum population requirement, a size requirement and the presentation of a supportive petition to the territorial legislators. A village was defined by territorial legislations as consisting of fifteen dwelling houses within an area of 640 acres in 1899. This area was enlarged to 1280 acres in 1901 and reduced to 640 acres with twenty-five dwelling houses under the new Alberta Village Act in 1907. Similarly a town in 1884 could not have an area less than 320 acres or more than 2560 acres with a population of less than 2000. With the ordinance of 1894 the area of towns was limited to 640 acres but should the population exceed 2000 then 160 acres might be added to the area for every 1000

population over 2000.[13] All cities in the present day Province operated under special charters under the territorial legislation.[14]

Towns in Alberta have traditionally been described with various adjectives as uniform, even monotonous in shape. As a result certain attitudes and conceptions exist in the literature which perpetuate this generalization. The goal of the Inventory of Town Plans therefore was to establish the accuracy of these perceptions. The Inventory was evaluated and analyzed for information regarding shape (alignment to the railway), the lot size, size and location of "Main Street", the number of blocks and the presence and location of "public" space. The analysis of data consisted of grouping responses and constructing simple frequency tables according to form features by company and by surveyor.

The following chapter establishes the historical precedents for townsite layout in North America and Canada. It also establishes the attitudes to land and land subdivision held by contemporaries of the period prior to 1880's which would have had a significant impact on the nature of development in Canadian West.

The focus of Chapter 3 is on townsite development policy in the Canadian West. This chapter will deal with the pre-railway era in its examination of the Hudson's Bay Co. townsite policy. Secondly, the federal government townsite policies will be discussed. It will be shown that

these early townsite activities established a precedent. The second and major portion of this chapter will deal with the railway era and the townsite policies of the Canadian Pacific Railway, the Canadian Northern Railway and the Grand Trunk Pacific Railway. Collectively these three companies were responsible for the development of approximately 1300 cities, towns and villages in the Canadian West.

The remainder of the thesis will discuss the physiographic nature of the province as providing the setting on which towns were established; the results of the town plan Inventory and the spatial and temporal variations in urban form in Alberta. Town layout is interpreted as a product of an age and of a complex set of variables. The plan is the slowest changing aspect of land use in contrast to building fabric and function which rapidly reflect changing economic, political and social interests.

Footnotes

1. The Canadian West here refers to the three Prairie Provinces - Alberta, Saskatchewan, and Manitoba. This thesis is primarily concerned with the southern parts of these provinces where sedimentary bedrock rather than Precambrian Shield is involved.
2. This typology follows that of John Hudson, Plains Country Town, Minneapolis, University of Minnesota Press, 1985, pp. 12-13.
3. C.A. Sharpe, "The Teaching of Urban Morphogenesis, "The Canadian Geographer 30, No. 1, 1986, p. 53.
4. Harold Carter, The Study of Urban Geography, London, Edward Arnold, 1972, p. 133.
5. Sharpe (1986), p. 55.
6. Sharpe (1986), p. 57.
7. G.P. Glazebrook, A History of Transportation in Canada, Carleton Library Series No. 11, Toronto, McClelland and Stewart, 1964, makes no reference to townsite development by the railway companies in Canada.

8. See T.D. Regehr, The Canadian Northern Railway, Toronto, Macmillan Co. 1974 or Harold A. Innis, A History of the Canadian Pacific Railroad, Toronto, University of Toronto Press, 1971; both devote only 3-4 pages to townsite development.
9. Heather Robertson, Grassroots, Toronto, James, Lewis and Samuel, 1973, p. 37.
10. Hudson (1985), p. 88.
11. Alberta is used as the study region and the experience in Alberta can be construed as representative of the experience in Saskatchewan, Manitoba to a lesser extent, northeastern British Columbia and Northern Ontario. Its application to other parts of Canada require additional research.
12. Carter (1983), p. 133.
13. John Blue, Alberta: Past and Present, Chicago, Pioneer Historical Publishing Co., 1924,pp. 161-163, 167-168. These requirements form the basis for incorporation in Alberta today.
14. Alberta became a province in the Dominion of Canada in 1905. Prior to that it formed part of the NorthWest Territories created in 1870 by the purchase of Rupert's Land from the Hudson's Bay Company.

Chapter 2

Precedent and Themes in Victorian Era Planning

It is commonly accepted by urban geographers that towns and cities are reflections of pre-existing social and economic conditions. Vance in his discussion on morphogenesis states that

> if we know that a city was founded at a particular time and we know the form that existed at that time, we are in a position to draw certain inferences as to the philosophy and motivation of the founders.[1]

Knowledge of past conditions enables us to understand the rationale behind form choices and development practices. The goal of this chapter is to identify the conditions and knowledge base prior to the settlement of the Canadian West in order to establish the cultural and economic framework in which western urban land development occurred. To this end, this chapter will discuss the historical evolution of the use of the grid plan and its application in North America. Secondly, nineteenth century attitudes in North America to land and to speculation will be introduced in order to facilitate the discussion of the railway land development in the following chapter. Finally, the rise of the urban reform movement will be discussed as it relates to changing attitudes toward urban development.

Much of the literature reviewed in this chapter refers to the evolution of the use of the grid plan in the North American city. The literature lacks any precise definition of what constitutes a city or town and it does not specify what constitutes the urbanization process. "Town" and "city" are often used interchangeably by geographers and planners as a reference to an urban place rather than as a reflection of a hierarchical relationship. Often "cities" were laid out in the wilderness prior to major settlement, thus the distinctions between city and country, rural and urban are also difficult to define. Many cities functioned as villages or towns for many years until their population caught up to their pretentious idealism. The processes, attitudes and influences on city building in North America are transferable between places, at least in the early periods of development, in order to arrive at some sense of a North American historical perspective.

Urban Design Traditions

The people who created North America's first urban places in the seventeenth century had access to several urban design traditions. Each makes a statement about the society which created and employed them. They included the grid plan, the irregular plan and the radial-concentric plan.[2] The grid plan was used in Greek and Roman times in the establishment of new towns during the colonization of

new territory. The principle of straight roads crossing at right angles provided an orderly framework for the division of land. In contrast, the circle was a logical form choice when security was important or where religion played a role in shaping the urban community to parallel the order of the cosmos. The irregular plan also reflects a concern with defence as well as an organic growth pattern which was more adaptive to site conditions. Streets are haphazard in width and direction with no dominant center. In contrast the radial-concentric pattern contains roads radiating from the center cut by a series of concentric circular roads with a strong nucleus.

The plan form that was chosen from Roman times for colonization purposes was the grid pattern. Stanislowski notes that certain conditions had to exist before the grid pattern could be used. First, the use of the grid was possible only for a new urban plat or newly added subdivision. Secondly, some form of centralized control whether military, religious or political is indicated for all known grid plan towns. Thirdly, a need existed for a measured apportionment of land. Finally, prior knowledge of the grid was essential for it to be used again in a colonial situation.[3]

The medieval period saw the development of radial circular plans in response to the concentration of local power and its defence needs. The construction of a walled

enclosure saw growth determined from the outside inward resulting in an irregular interior pattern. The arrangement of streets was radial with a single dominant center. Layouts were more adaptive to site with variations in topography incorporated into the plan.[4] While the medieval period was not noted for colonizing endeavors, new towns were laid out by the French, the English, and by the Spanish in the outlying portions of their territories. Within present day southwest France for example, these new towns, known as bastides, served as frontier outposts. As a result they were compact and enclosed by walls for defence. The bastide was an integrated combination of a fortified strong-point with a center of economic development. Most were laid out in a grid pattern for the convenient division of building plots and provided open spaces for the market and church.[5] Winding streets of the medieval towns provided a greater security from attack while the use of grid streets reflected the need for better access to markets. Medieval town planners were familiar with regular geometric forms and used them in colonization programs.

The Renaissance period saw the re-establishment of interest in antiquities linked with the need to develop an effective method for colonizing frontier lands in Europe and North America. Reps notes that the elements of European planning tradition were based on a knowledge of colonization techniques from the Greco-Roman period.[6] This information

was coupled with knowledge of a whole series of architectural treatises by individuals such as Alberti and Palladio dealing in part with the principles of planning urban reconstruction and the extension and layout of new sites. The Renaissance period was characterized by a sense of order and symmetry which was reflected in the development of residential squares. The late Renaissance development of garden and path design influenced the layout of cities particularly in the alignment of major streets and boulevards.

The Renaissance contribution to modern urban design is in its use of perspective, monumentality of principal arteries, and in the development of civic open spaces. To quote Leo Battista Alberti(1472) the streets of a "noble and powerful city" should be "straight and broad" because they will convey "an Air of Greatness and Majesty". All "streets, squares and public Edifices" must be "laid out and contrived beautifully and concurrently, according to their several uses for without order, there can be nothing handsome, convenient or pleasing".[7]

The grid plan was used extensively in Renaissance plans because it was suited to imperial purposes. It could be laid out quickly and with relatively crude instruments. The continued appeal of a rectilinear system of urban planning was due to the fact that the basic layout of streets could be retained during infinite expansion of the plan. The plan

was easy to implement under the directive of a central authority, whether it be state initiatives or individual projects. Town form concepts which evolved in Europe were ripe for transplanting to the colonies as part of their national settlement strategy.

Colonial Urban Form

Numerous examples exist of the use of the grid as part of the colonial settlement strategy. Amongst the earliest was the British town planting of new towns in Ulster in 1609. The town plans of Coleraine and Londonderry followed a walled grid plan with a central market square typical of the bastide. Proposed London reconstruction plans of 1688 included several grid layouts combined with the fashionable residential squares. Charleston, laid out in 1672, followed the instructions of the London office for its grid and central square form. Penn's plan of Philadelphia in 1682 reflected the contemporary attitudes to land subdivision. The plan was surveyed by Thomas Holmes whose use of the grid reflected the practical knowledge of the surveyor, but also the historical context of expanding trade and empire. Town plans in this era consisted of a grid scheme with two principal streets intersecting at right angles and the intersection forming an open square. [8] The Philadelphia plan established a precedent in terms of land development which was to affect subsequent attitudes to land. The

Philadelphia model permitted a rapid, simple, determinate division of larger land holdings into smaller parcels which might be verbally described and sold to others.[9] The plan was a diagrammatic expression of the range of concerns underlying Penn's enterprise; ie. colonization, profit through land sales, local trade, and political and moral control. Towns were laid out by those capable of surveying - military engineers, astronomers, school masters - anyone with the knowledge of map skills could engage in townsite surveying.

Subsequent plans such as that for Savannah (1732) repeated the form established in Philadelphia. Savannah was established by James Oglethorpe, who was concerned about the moral effects of poverty, as an experiment in social justice.[10] Broad avenues divide the city into identical quadrants, each centered on an open square. The layout reflects an integration of rural-urban functions as land was granted in combined rural and urban units. The square recognized the importance of trade. Savannah was designed in such a way that its essential features would be preserved as the city expanded.

The American Revolution had a great impact on townsite development in the American colonies. The Land Ordinance of 1785 established the American land subdivision system based on the rectangular grid. The Ordinance predicted a grid system for all future towns. As townships were subdivided,

small rectangular tracts were formed and when acquired by townsite promoters were subdivided into simple grids with streets parallel to their borders.[11]

For the land speculator, the grid pattern was ideal. The grid was the natural tool of the speculator - no other plan form was as easy to survey, yielded so many uniform lots, was as easy to describe and to sell.[12] The expansion of New York City in 1831 occurred according to a plan determined by speculation. City commissioners ignored alternative well-known principles of civic design, such as L'Enfant's axial boulevards used in Washington, on the grounds of economy and practicality, choosing instead a simple unadorned grid.[13]

Townsite speculation and promotion became especially prevalent from the 1830s with the new relative accessibility of the American West. Contrary to traditional locational theory whereby gradual and random incremental growth transformed a crossroads hamlet into a town or city, western town development occurred according to townsite company directives.[14] The typical procedure involved the selection of a promising site by individuals, groups, churches, railway companies, corporations or government agencies. The tract was then surveyed into streets, lots blocks and open spaces. Land surveyed into lots and mapped meant that it became a marketable commodity with speculative value. Private developers determined the location and design of

communities with profits going to the individual speculator and investor. Reps noted that the same techniques of townsite promotion would be used time and again throughout the West after being tested and refined in the Ohio and Mississippi valleys.[15]

British North America

In contrast to the development of a speculative attitude to land in the American colonies from the late Eighteenth Century on, townsite development in British North American continued according to Royal Instruction. Stelter notes that the result was a blend of American and British tradition and practice.[16] Wood found that eighteenth century towns show a consistency in morphology between Canadian and pre Revolutionary American Towns. Charlottetown (1768) and Savannah (1734) contain features, such as the repeating square within the grid, that were to reappear in officially sanctioned plans on both sides of the border.[17]

The Royal Instructions to the Governor-General (1786) established the framework for townsite development in British North America.[18] These instructions included dimensions for the town plot, size of lot, size of park, and location and size of the public square. The actual interpretation of those ideas rested with the colonial surveyors. The colonial surveyors under the Surveyor

General effected a compromise between what could be read into the document from the Home Office and what seemed appropriate on site. Wood calls them the "guardians of whatever indigenous wisdom there was" in town layout in North America.[19] Dimensions of lots, street width, orientation and exposure were left to the judgment of the surveyors on site.

The towns of British North America between the 1750s and 1790s retained a conceptual similarity on both sides of the border. They contained a regularized form based on a grid of streets and blocks, public space was allocated in at least one market square, an allowance was made for a defensive role and a distinction was made between urban and non-urban land.[20] Dorchester's Regulations proved to be unworkable due to the amount of land tied up in town plots.

Upper Canadian town builders drew on the experience of past colonial efforts based on several common organizing principles.[21] The first was the assumption of some degree of government or corporate control over individual development practices. The second was the nearly universal adoption of the grid pattern. Third was a concern to combine town and country planning by granting settlers land in both. The town was an integral part of the township survey and this rural perspective was reflected in the large centrally located market square.[22] Finally, colonial towns acted as channels for the development of a region. A

network of towns was viewed as a stimulator for settlement.

Towns of the mercantile era were characterized by their lack of connections with other towns in the colony. Their focus instead, was on connections with the overseas metropolis. Towns were usually entrepôts collecting staples and distributing manufactured goods. In addition to their function as entrepôts, such places shared imperial, political and economic characteristics. Most towns of this mercantile period were "planted", that is, they were consciously conceived in order to precede settlement and to stimulate more general settlement. Their military function as garrisons for defence and administrative units was also important.[23]

Stelter notes that the third phase in Canadian urban development was characterized by decentralization.[24] In the commercial era emphasis was on the development of local and regional trade and small scale artisan production. Small secondary centres which emerged developed a degree of autonomy due to the isolation created by the transportation system. Leadership in these communities was concentrated in the hands of an entrepreneurial elite dedicated to commercial growth through improved transportation and manufacturing. The largest urban places won a measure of autonomy from direct imperial and provincial control by the 1830's and 1840's as cities won their acts of incorporation.[25] No one seems to have consciously planned

towns and villages in this era. The central authority always felt they were founding cities to dominate the hinterland. Villages developed primarily for commercial reasons in response to site conditions such as adjacent rapids. Village structure thus was based on individual responses to commercial opportunity and took a linear form based on water courses or roadways.[26]

Subsequent periods in urban development occurred in what Stelter calls the industrial era.[27] In the absence of central direction in shaping cities, form was determined by the private decisions of individuals and corporations. Railways dominated the thinking about growth from 1850 on, as they opened up new markets for the established metropoli. Patterns of existing cities changed to accommodate new stations, rail lines, yards and shops.

Land and Speculation

The concept of land as a commodity for speculation in North America dates from Penn's plan of Philadelphia in 1683. The sale of land was the primary goal of the plan and thus required an easy method for the identification and sale of lots. The movement of settlement into the Trans-Appalachian West from the 1780's on signaled the establishment of a commercial ethic based on land as a commodity. Using Philadelphia's plan as a model, countless

communities were established on paper and sold by promoters. Reps notes that townsite speculation and promotion were common functions of the Western land developer.[28] The emphasis was on haste and minimum investment, therefore little attention was paid to the urban form,

Railways ushered in a new era in speculation. Improvements in transportation meant new markets could be tapped but also money could be made in speculative investment in land. Thus, beginning in the 1820's in the United States, in the 1830's in Britain and in the 1840's in Canada, the prospect of immense gains lured people into railway land speculation. The principal fear of all communities was of being left out with inferior access and facilities.

As in the case of the American experience, land in Canada was perceived as a commodity to be traded for increased wealth.[29] Subdivision of lots was carried out on a small scale by many speculators often in advance of actual need. The result was a fragmented pattern of development. The entrepreneurial elite was active in speculation and gambling in land and by 1870 land and building companies became common. Ownership of suburban land was concentrated in the hands of the elite who either had received it in grants or purchased it cheaply. Land owners seldom developed their own land, preferring to sell it to speculators or developers.

The grid plan became the symbol of mercantile capitalism. The theme of self-interest and self-made wealth became a goal of entrepreneurs. The grid was the simplest, cheapest and most rapid way of exploiting land. The rectangular grid of small lots with moderate size blocks which were easily described, occupied or transferred became the 'model' for urbanization used by Victorian land developers. Carter notes that the grid was a testimony to an egalitarian system which made no distinction between men other than their ability to compete.[30] That competition was best organized on the grid so that transactions in property could easily be carried out. Speculation was viewed as a positive development tool on the frontier but became a subject of great debate as settlement and metropolitan development consolidated land holdings into the hands of a privileged few.

Progressive Reform Era

The seeds of discontent were growing within the nineteenth century framework of metropolitan commercialism, manifested by its preoccupation in land and land speculation. This period was characterized by a rapid increase in urban growth coupled with an increase in economic activity in the manufacturing and processing industries. Widespread epidemics, congestion, overcrowding, social unrest, the lack of sanitary facilities and rampant

land speculation were problems which demanded reform by nearly all elements in society. Reformers viewed land as a social resource to be developed for the benefit of all. The vision of a healthier city governed by a municipal authority rather than the speculator was seen as the means to increase the happiness of its citizens.[31]

This reform era was not specific to one country but was developing simultaneously in the United States, Britain and Canada from the 1830s on. No one thought dominated this era, rather it was characterized by a growing awareness for the need for change in established practices whether it be public health, urban design, sanitation or municipal government. The reformers drew their ideas from the areas of parks and landscape, civic/municipal reform, and housing and land reform. The interest in public parks developed in the 1850s and 1860s from the romantic philosophy that green space was required for public health. Civic reform became an issue during the 1890s as reformers worked toward an urban environment which was less congested, more healthful, and more aesthetically attractive. The catch-words of this era were "scientific efficiency", "civic beauty", and "social equity".[32]

Conclusion

Attitudes toward land as a speculative commodity became crystallized during the nineteenth century. The tradition

for land development in Canada was established according to tacit and formal guidelines that had been laid out a century before. The urban form was designed by central authorities reflecting contemporary thought on colonial land development as in the case of Charlottetown. Centers laid out in Upper Canada were planted by colonial authorities initially to serve their agricultural hinterland or were planted by land development companies as a reflection of contemporary idealism as in the case of Guelph.

Overwhelmingly the grid plan was the choice of townsite developers in Upper Canada. The plan was characterized by a market square surrounded by rectangular blocks and bounded by common lands. The common lands functioned as a transition zone between urban and rural land uses and served to maintain the rural character of the sites. As communities grew, subdivisions were added again in parcels using the grid. No coordinated plan existed for communities because land was viewed as a commodity for individual disposal at will. As immigration brought more settlers, urban land speculation became an accepted means for increasing one's wealth. Land was recognized as an investment commodity. With increased urban congestion, social issues became more important. In Upper Canada, the concern in larger centers was with housing and sanitary reform. A concern with civic beauty and improvement developed as a response to the speculators use of grid

subdivision.

By 1870, Canada was faced with the immense task of developing a coordinated policy with which to populate its Western territory. The need for a railway to connect the parts was immediately recognized. A land survey system and land acquisition system was borrowed from the Americans and revised and implemented to suit Canadian conditions. Simultaneously, the American West was developing rapidly due to railway promotion efforts and immigration policy. The Canadian West could no longer be left as undeveloped territory in a continent caught in the land development boom of the century.

Footnotes

1. J.E. Vance,Jr., This Scene of Man: The Role and Structure of the City in the Geography of Western Civilization, New York, Harper College Press, 1977, p. 2.
2. Sylvia Fries, The Urban Idea in Colonial America, Philadelphia, Temple University Press, 1977, p.26.
3. D. Stanislowski, "The Origin and Spread of the Grid Pattern Town," Geographical Review 36(1934), p. 119.
4. D. Scargill, The Form of Cities, New York, St. Martins Press, 1979, p. 147.
5. Fries (1977), p. 27; John Hudson, Plains Country Town, Minneapolis, University of Minnesota Press, 1985, p. 67; H. Carter, An Introduction to Urban Historical Geography, London, Edward Arnold, 1983, p. 154.
6. John Reps, The Making of Urban America: A History of Urban Planning in the United States, Princeton, N.J., Princeton University Press, 1965, p. 1.
7. Quoted in Fries (1977), p. 29.
8. Carter (1983), p. 3.
9. Vance (1977), p. 259.
10. Scargill (1979), p. 180.
11. J. Reps, Cities of the Way West: A History of Frontier

Urban Planning, Princeton, N.J., Princeton University Press, 1979, p. 8.

12. Reps (1965), p. 300.
13. Reps (1965), p. 294.
14. Reps (1979), Preface, p.10.
15. Reps (1979), p.10.
16. G. Stelter, "Urban Planning and Development in Upper Canada" in W. Borah, J. Hardoy, G. Stelter ed. Urbanization in the Americas, Ottawa, National Museum of Man, 1980, p.146.
17. D.J. Wood, "Grand Design on the Fringes of Empire: New Towns for British North America", The Canadian Geographer, XXVI, 1982, p. 250.
18. Wood (1982), p. 250-251. Also referred to as Dorchester's Regulations.
19. Wood (1982), p. 251.
20. Woods (1982), p. 252.
21. French Canadian towns in this period were planned according to circumstances prevailing at the time. A variety of patterns were used but all reflected the feudal society with its twin powers of priest and seignior. Plan forms tended to be in a linear pattern dictated by the topography.
22. Stelter (1980), p. 148.
23. G. Stelter, "The City Building Process in Canada" in G. Stelter and A. Artibise, ed. Shaping the Urban Landscape, Ottawa, Carleton University Press, 1982, p. 7.
24. G. Stelter, "The Political Economy of Early Canadian Urban Development" in G. Stelter and A. Artibise ed., The Canadian City, Ottawa, Carleton University Press, 1984, p. 6.
25. Stelter (1982), p. 11.
26. C. Harris and J. Warkentin, Canada Before Confederation, New York, Oxford University Press, 1974, p. 156.
27. Stelter (1982), p. 15-22.
28. Reps (1965), p. 360-361.
29. Stelter (1980), p. 148; Stelter (1982), p. 15.
30. Carter (1983), p. 121
31. P.J. Smith,"John Arthur Roebuck: A Canadian Influence on the Development of Planning Thought in the Early Nineteenth Century", Plan Canada 19, 1979, p.201.
32. Smith (1979), p. 205.

CHAPTER 3

Townsite Development in the Prairie Provinces

Introduction

An important question in central Canada prior to Confederation was whether the Northwest[1] was suitable for settlement and development. Settlement to that point was confined to the area immediately surrounding the trading posts of the Hudson's Bay Company. Numerous expeditions were launched both privately and by the Government in order to establish the suitability of the land for agricultural settlement and the feasibility of building a railway to the Pacific coast. Gentlemen scientists, surveyors, engineers such as Palliser, Hector, Dawson and Hind explored the region from Lake Superior to the Rocky Mountains. Their resultant reports contained conflicting information on the agricultural capability of the region. Palliser's report drew attention to the "fertile belt" and a zone of arid plains, and created considerable interest in the region. The acquisition of Rupert's Land by the Government of Canada was the result of the conviction within the new Dominion that "the agricultural possibilities of the country were too great to admit of its being reserved any longer for the fur trade".[2] Thus the stage was set for the federal Government to create, implement and maintain a strategy which would

permit the settlement of the Northwest in an orderly fashion.

The Canadian government looked south to the infrastructure which was in place for the development of the American West. The Americans used a program based on three main elements - a rectangular system of land survey, a free homestead policy, and a transportation network. The rectangular survey provided an efficient land subdivision method which eliminated overlapping or conflicting land claims and was easy to administer. The homestead policy provided free land based on residency and improvement guidelines. The use of the homestead committed the government to the use of the land as an instrument of national development. Finally a well developed transportation network was required both to ratify Canadian territorial rights and to promote the economic base of the region. A railway land subsidy policy also was borrowed from the Americans and altered to suit the Canadian policy needs.

Hudson's Bay Co. Reserves Survey

The Hudson's Bay Company (HBC) in 1869 agreed to the transfer to the Government of Canada of its rights in Rupert's Land in return for a cash payment, a land allotment in the fertile belt and acreage around its trading posts.[3] Land to the HBC represented its capital as part of the final

payment for the surrender of its rights in 1869. The economic interests of the Company thus dictated that the land be held until the most profitable bargain could be struck for its sale.[4] The Company directors viewed the land around their posts as the most valuable of their holdings. This land was regarded as providing the potential nuclei for future settlements. Thus, the size and location of the Reserves reflected the Company's perceptions of future urban growth.

Contemporary knowledge of the region established the boundaries of the fertile belt and future railway plans were forecast along this route[5] (Figure 1). The majority of the Company Reserves were chosen along the North Saskatchewan River and the Carleton Trail - the major east-west cart trail linking Ft. Edmonton to Winnipeg. The framework for future community development was provided by the Settlement Maps which were prepared in the late 1870's for each post by Dominion Land Surveyors using the river-lot system of survey.[6] This system had been transplanted to the Canadian West from the French Canadian settlements of the St. Lawrence Valley to accommodate the initial settlement by the metis and others outside the Company posts. The river lot thus provided the framework for subsequent urban subdivision plans at these sites.

The Company established a formal Land Commissioner's position in 1874. The form of the townsites was established

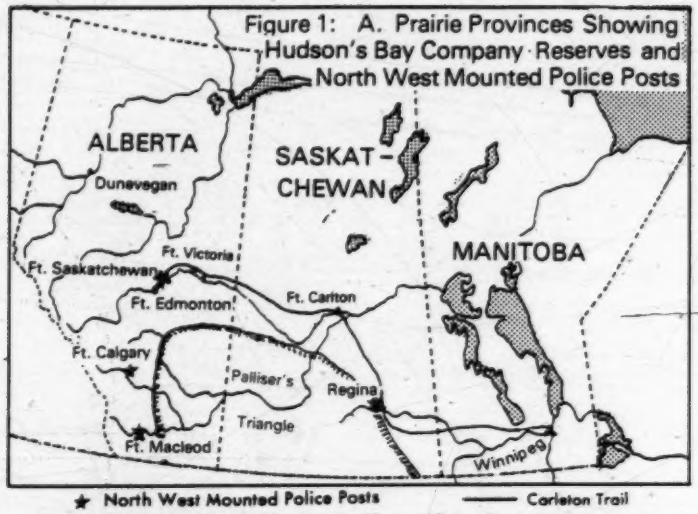
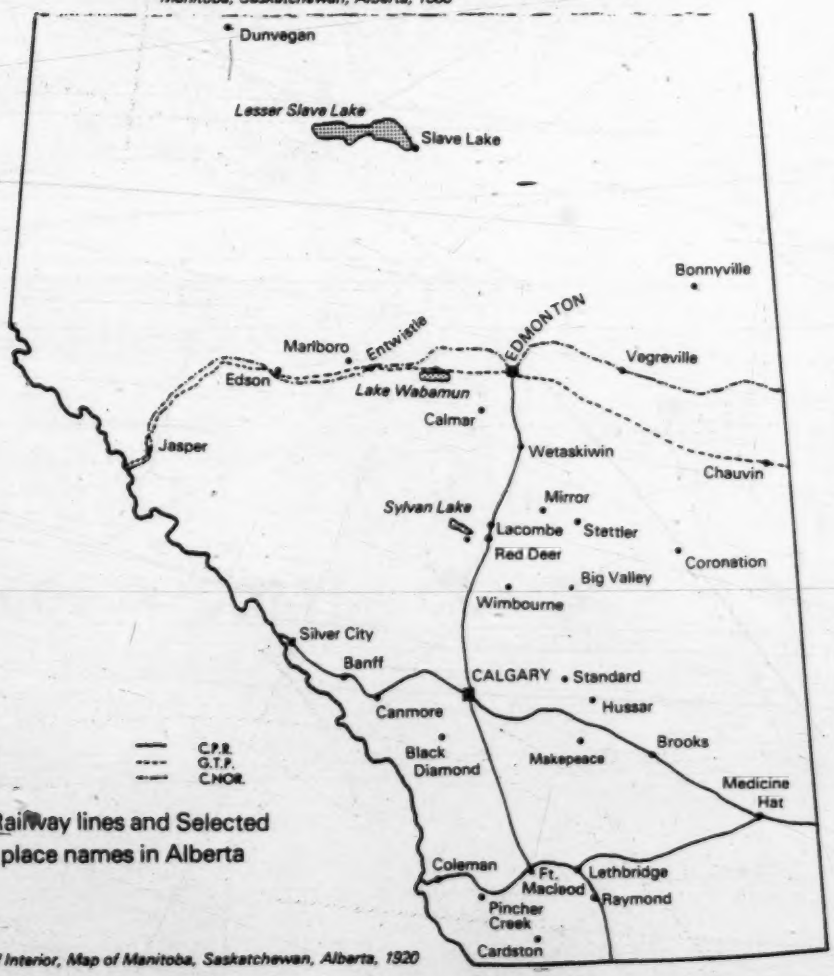


Figure 1: A. Prairie Provinces Showing Hudson's Bay Company Reserves and North West Mounted Police Posts

Source: Dominion of Canada Map showing Mounted Police Stations and Patrols, Manitoba, Saskatchewan, Alberta, 1888



B. Railway lines and Selected place names in Alberta

Source:
Department of Interior, Map of Manitoba, Saskatchewan, Alberta, 1920

in conjunction with Surveyor-General of Canada Col. J.S. Dennis, and laid out by surveyors on contract to the Company.[7] The Hudson's Bay Company townsite policy was directed by the Chief Commissioner who established the terms, prices and methods of sale. Subdivision of the Company Reserves began in the 1880s in response to local demand and market conditions. The general urban form, repeated at nearly all of its reserves, was a grid plan layout with uniform-sized lots, rectangular blocks, a main street of 100 ft.(30.5 m.), secondary streets of 66 ft.(20.1 m.), and no concern for topography in the layout of the site. Lots could be given for schools and incentives were available to draw manufacturing industry to the townsite. In the case of Edmonton, initial plans called for citizens to locate a market square and to identify the location of a main street. Subsequent plans, as prepared by the Dominion Land Surveyors, contained no allotment of land for parks, public space, commercial structures nor any differentiation of lots for commercial or residential purposes.[8] There is no indication of why the Company changed its plans but the goal of the Company was to maximize its return at each site through fast and efficient subdivision. It appears that factors determining town growth such as trade facilities which formed the nucleus of the townsites, outweighed form considerations. Land required for a special use, for example a mill, saw the site superimposed on the

predetermined grid as was commonly done at the time.

Department of Interior Townsites

At the same time that the Hudson's Bay Company was subdividing its Reserves, the Federal Government was laying out townsites at Ft. McLeod and Ft. Calgary at its North West Mounted Police (NWMP) posts. These townsites provide a good insight into the Department of Interior's urban land policy. Federal Government attitudes to and perceptions of land established a precedent regarding subdivision directives to surveyors in the Northwest. These directives thus reflected the prevailing central Canada attitudes toward urban land development.

Ft. McLeod was surveyed in 1883 by A.W. McVittie DLS, who came from Ontario, according to instructions received from the Minister of the Interior and with input from the local NWMP officers.[9] The letter goes on to give specific instructions regarding the width of streets, avenues, lanes, block size and lot size. The commanding officers, Majors Crozier and Irvine, wanted to alter the plan to include an "Esplanade" along the river front in order to maximize the aesthetic view of the river as well as providing a beautiful drive or promenade.[10] In order to obtain such a change, memos were forwarded to Ottawa through the Minister and new instructions were issued to McVittie to incorporate the changes.

> No definite instructions can be given to you as to the manner in which this should be done; you will exercise your own discretion in the matter and adopt such

> course as will interfere in the least degree with the general plan of the townsite.[11]

This sensitivity to local wishes is echoed in another set of instructions to G.W. Vaughan DLS for the survey of Silver City in 1884:

> In making this survey you are to pay proper attention to the wishes of the settlers and you are authorized to depart from the above instructions, should you find it adviseable, in order to meet their views.[12]

Silver City was to be on the Canadian Pacific Railway (CPR) mainline west of Lake Louise and consisted of 24 Blocks of 50 x 100 ft. lots or some 480 lots.

The instructions given to McVittie for the survey at Ft. Calgary in 1884 were for the subdivision of land adjacent to the CPR land.[13] McVittie's instructions give specific directives for the alignment of streets and avenues to the railway with "avenues to run parallel ... and the streets perpendicular to it."[14] Lots were to be 25 x 130 ft. throughout the entire section to be subdivided.

McVittie conducted the survey under a great deal of harassment from William Pearce, the Government's Superintendent of Mines, regarding the correct surveying method for the placement of wooden corner posts. McVittie's reply to Pearce's complaints is an excellent example of some of the problems associated with land subdivision in southern Alberta where wood was scarce. Regarding posts and the townsite survey,

> The Indians steal them for firewood - several trails run over them, in the summer a race course was laid

> out and all posts in the way removed and finally any posts standing over 6 inches above ground are apt to be knocked out by cattle.[15]

None of the instructions included any comments regarding parkland, school sites, or designation of the main commercial centre. These instructions provided directives for the simple conversion of raw land into marketable units.

The final example of the role of the federal government in establishing a precedent for townsite form is illustrated by the Canmore townsite plans prepared in 1889. Canmore was a joint townsite of the Government and the CPR. It's location near large coal deposits in the mountains added potential for major coal development. Canmore was to be the railway divisional point and major shipping point for various coal company interests thus a large town plat would have been in order. The Department of Interior, Technical Branch under Surveyor General E. Deville prepared a plan, shown in Figure 2 which was submitted to Pearce among others for his comments. Pearce was asked to review the plans not only because of the extensive political contacts he enjoyed in Ottawa -- particularly with A.M. Burgess (Deputy Minister of the Interior) and Sir John A. MacDonald -- but because he also was trained and had a notable career in land surveying. Pearce responded to Burgess with the following comments:

> I am of the opinion that the S.G.'s the authority of subdivision and while cheerfully willing to accord to him any amount of praise for his ability in the higher branches of surveying I do not for an instant hesitate in expressing the opinion that if his subdivision at Canmore be adopted one Dept. will be made the laughing stock of all men who have any

Figure 2: Proposed Town Plan of Canmore, 1889, E. Deville.

Source: University of Alberta Archives, William Pearce Papers, Acc. No. 74-169-961.2

This figure was removed due to microfilming problems. The features of this plan are: the two large squares, the radial streets emanating from the corners of the squares, the square at the station site, and the use of the grid.

practical experience in town plot subdivision...[16]

A subsequent telegram from Pearce to Burgess gave additional reasons for the plan's unsuitability:

> The plan furnished...has twenty-link lots; lanes and many streets too narrow and very many lots not square on street (and) does not give access by railway to lands south and west.[17]

Originally from France, Deville was trained in hydrographic surveys for the French navy. He was appointed as Surveyor General of Canada in 1885. Deville states that his Canmore design was influenced by the baroque radial designs of L'Enfant (Washington, 1791) and Hausemann's Paris replot. Both of these plans combined wide radial streets with the use of commanding topographic site features overlain by a hybrid grid. The essential character of the grid with its rectangular blocks and right-angled intersections was maintained. Pearce in contrast, represented the prevailing perspective held by surveyors from Ontario and Quebec that a simple grid was the most practical and appropriate form for townsite plans.

A new contract was issued to A. Brabazon DLS to resurvey the town plot according to the new instructions. The town plot that was subsequently registered is shown in Figure 3.

Both the Hudson's Bay Co. policy and the federal government policy with respect to townsite subdivison reflects the contemporary attitudes to land. Land was perceived as a form of capital and future wealth was

Figure 3: Registered Canmore Plan by A. Brabazon, DLS, 1889

Source: University of Alberta Archives, William Pearce Papers, Acc. No. 74-169-961.2

This figure was removed due to microfilming problems. The main features of the plan are: the undifferentiated use of the grid, and the large size of the plan. Terrain features were ignored.

dependent on maximizing the returns from that capital. Maximizing the returns meant an economical division into units - the greater number of units, the greater the return. Secondly, land held an investment value for speculation; thus time and good promotion would increase the value of one's investment. Urban design ideas such as formal parks had little impact on layout because of the relative openness and apparent emptiness of the landscape. More complex street layouts do not appear to have been considered due to the ease and speed offered by the grid. Instructions to surveyors from the Minister were simple; thus designs were forced to be simple as well. The early form choices were a reflection of land attitudes and the requirements of the early land holders combined with the level of instructions given to the surveyor.

Canadian Pacific Railway

The policies and practices of the Canadian Pacific Railway (CPR) regarding the sale of town lands and the subdivision of townsites are neither simple nor easy to determine. The Act creating the Company in 1880 makes no mention of town lands. The Company had no formal townsite department until 1912. This section is thus based on evidence gained from various sources which have been combined to provide some idea of policy and is by no means complete nor exhaustive in its scope.

The only source for a general policy which may have been adopted in part by the Company is Sanford Fleming's Report on Surveys on the Canadian Pacific Railway produced in 1877. In the Appendices to the report, Fleming gives directives regarding stations, town plots, roads and crossings. This Appendix contains a reprint of the correspondence from the Dominion Lands Office, Department of Interior (1875) which gives a clear statement on townsite process:

> The site of railway stations will, as a matter of course, be selected as well by engineering as by trade considerations, and will be altogether in the discretion and judgment of the engineers of the road.
>
> The town plots, as a rule, to embrace four of such lots (1 mile deep and 20 chains frontage), and to be laid out on a uniform plan, into building and park lots. [18]

Fleming proposed to locate station sites at six to ten mile intervals 'at convenient distances'. The town plot designs illustrated in Figure 4 were vetted by the Premier of Manitoba prior to their submission to the CPR. Fleming incorporated into a symmetrical design, blocks of varying sizes depending on commercial or residential use, a town common and park or acreage lots. The grid was angled at 45 degrees rather than at the conventional right-angle to the railway. Fleming also included a village plan in his design which incorporates small farm lots into the plan. These plans resembled Upper Canadian plans from nearly a century earlier which had also incorporated rural and urban

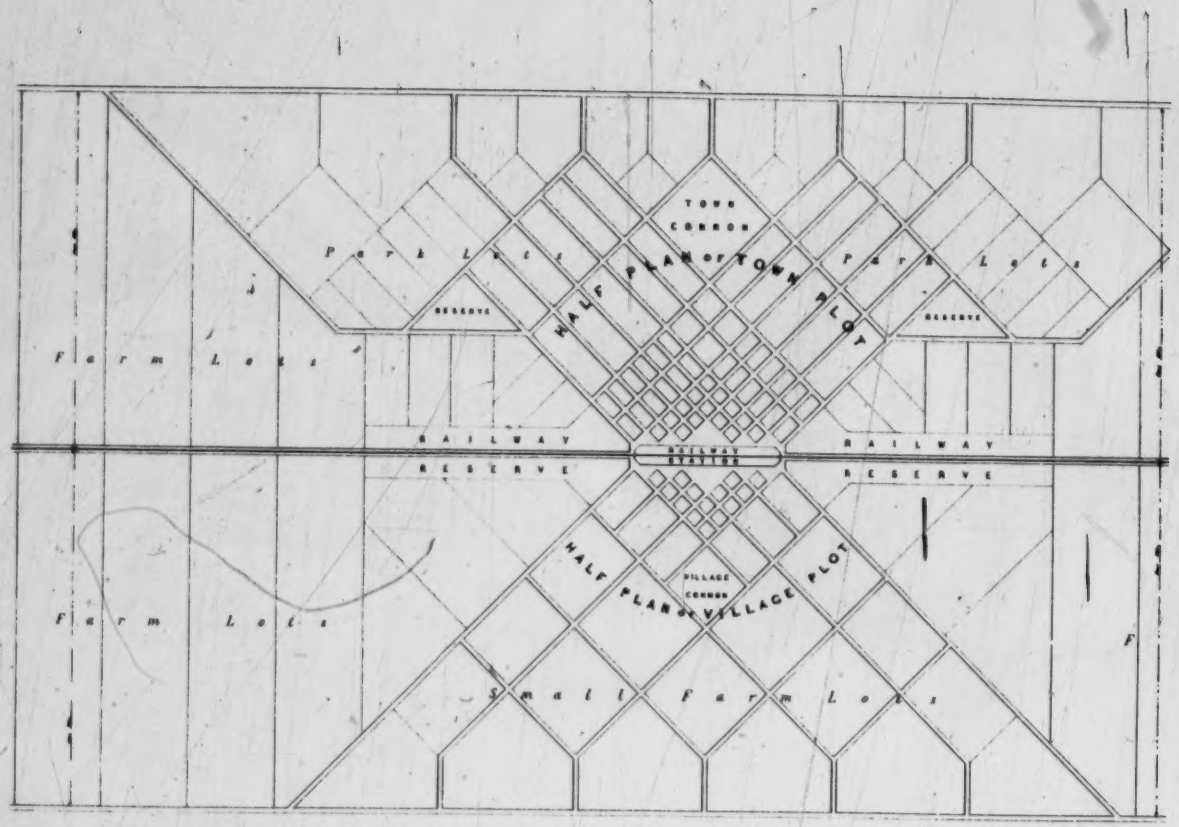


Figure 4: Sanford Fleming's Proposed Town Plat Designs, 1877.

Source: S. Fleming, Report on Surveys and Preliminary Operations on the Canadian Pacific Railway, Ottawa. MacLean, Roger and company, 1877.

components within an uniform layout. With the corporate reorganization and subsequent route change in 1880, Fleming's designs appear to have been ignored by the Company. His major contributions to town planting thus were the even spacing of townsites, the site selection process by engineers, and the concept of an uniform design for townsites.

By 1882 the CPR needed to convert its land, into cash. The railway company sold to the Canada North West Land Co. all of its town and village plots and sites at all railway stations along the mainline between Brandon, Manitoba and British Columbia. The CPR however, continued to maintain its Land Department to deal with right-of-ways, agricultural settlement and branch line townsite development. The original Canada North West Land Co. was liquidated in 1893 and a new one was incorporated using the same name, under the trusteeship of W. Scarth, to continue its townsite business. This company was in effect a subsidiary of the CPR until its townsite agreement was terminated in 1908. The Canada North West Land Co. by its contract with the CPR, held trusteeship to forty-seven towns in the West. In Alberta, only Calgary, Medicine Hat and Canmore were under its trusteeship.

In planting towns, the Canada North West Land Co. also enjoyed the co-operation of the government. The Federal Government withdrew from entry all even-numbered sections

next to and along both sides of the CPR and its branches, thus creating the "mile belt reserves". [19] The purpose of this move was to withhold those lands from alienation until town and station sites along the railway were located and to prevent advance acquisition by private parties. The Canada North West Land Co. was angered by this policy and saw it as a means for the government to control townsite development profits. Scarth's suggestion to Van Horne was "that you may find it possible to put all your remaining stations on odd numbered sections."[20]

At prospective divisional points such as Canmore, the Company and the government entered into a joint venture laying out town lots on both government and railway lands. A pro-rated division of net proceeds from townsite sales gave one-quarter to the railway, one-quarter to the Canada North West Land Co. and one-half to the Government of Canada.[21] Most townsites were thus located on railway company lands. Where necessary the land company would develop a half interest with the owner or with the government but this does not seem to have been the preferred alternative.

The subdivision at Calgary occurred in the section adjacent to the one developed by the government and reflects the Company policy of maximizing its own revenues. The Calgary plan provided no land use guidelines. The market at the land sale determined appropriate use "nearly all being

on the west half of the section and north of the track, as near as possible to the station. Baker and Co. however purchased four lots for a warehouse on the south side of the tracks in addition to a site for a store on the north side."[22] The Canada North West Land Co., through its agent, went on to reserve every two alternate lots in order to benefit from the sure rise in value of the properties.

The layout of townsites does not appear to have been formalized in policy documents. The original agreement between the CPR, the Canada North West Land Co. and the Crown provides an idea of what current perceptions of towns should be. It states:

> that the said townsites respectively should be laid out in Town lots, streets and squares, with certain reserves and appropriations for public and other purposes, and for railway purposes and for sites of Government offices and buildings.[23]

That no squares were laid out in Alberta towns by the Company shows the extent that speculation dominated planning interests. The rapid sale of land dominated any planning concerns. Given the volatile nature of the land market, purchasers appeared to have had little interest in urban design and greater interest in profit making. It appears that each site was treated on an individual basis, and if there was an existing community at the site, its inhabitants were consulted. If no objections were raised then no changes were made to the plan. Where no pre-existing community was present then the Company did as it pleased.

The location of industrial structures evolved through practice into a policy. The placement of grain elevators moved from the passenger side of the tracks to the siding on the opposite side. This occurred for reasons of passenger safety and civic amenity. Coal car switching could not be carried out in the middle of the station grounds "as that would reduce the value of the property for townsite purposes."[24]

Townsite location occurred in a cyclical fashion. The railway engineers determined the route, taking into consideration such matters as grade, terrain and hydrography. Sidings were located using the six to ten mile (9.6 to 16.05 kilometer) interval rule and were identified by number, for example Siding 10. Not all sidings along a line were destined to become stations. Station locations were arbitrarily established in each segment of the line using potential traffic as one criterion. In the case of older settlement areas, the site was often purchased after it had been noted by the Company as a potential station. At this point owners and land speculators often tried to maximize their profits with the result that the CPR moved the proposed station to its own section of land.[25]

The CPR used local conditions as a barometer for economic potential which translated into a hierarchical town pattern. Sidings were laid out on a regular basis to handle traffic requirements. Station locations were formalized by

the Railway Commission in Ottawa and confirmed the growth potential of the siding area. Divisional points were established at 125 - 135 mile (200 to 216.0 kilometer) intervals. All stations had dreams of becoming divisional points but once the line was established, divisional points were rarely added to a line. In some cases branch line construction from main lines made for exceptions to the rule.[26] Divisional point status was desired because of its greater potential for generating economic growth. Every train passing through the town had to change engines and crews. Passenger trains usually stopped long enough for passengers to buy food and other refreshments. The railway increased the amount of local acreage requiring subdivision at such sites. This was done to provide room for a more substantial business district, create a larger residential area to accommodate the employees, and provide for a larger railway right-of-way for freight yards and switching terminals.

The Townsite agreement between the CPR and the Canada North West Land Co. was dissolved in 1908 and the remaining unsold townsite properties were divided between the two companies. From 1908 to 1912 townsites were administered by the Land Department of the CPR in Winnipeg and in 1912 the Land Department was transferred to the newly created Department of Natural Resources in Calgary. Townsite land was placed on equal footing with coal rights and mines, tie

and timber operations and irrigation works as a corporate resource.

The establishment of a Department of Natural Resources meant that a degree of coordinated planning could go into townsite development. Previously, townsites under the Land Commissioner of the CPR were planned on an ad hoc basis centered on traffic requirements. By 1912 corporate correspondence indicates that a policy for townsites was becoming formalized. A hierarchy was established between "inside business property" and "the outlying or residence locality".[27] A policy toward church and school sites was clear by 1912. Church land concessions consisted of two lots at half price for land in the residential area. School land was also sold at half price. Both of these concessions were given as an "encouragement to the development and settlement" of a particular place whenever requested. Free hospital sites were offered as an inducement at some sites where the Company had a large investment in townsite land.[28]

Branch line construction was seen by the CPR as the means for opening up and settling large areas of the country. The Company monitored the settlement rate, the hinterland potential of a region, and conducted studies and assessments regarding proposed routes. Settlers would hear of proposed routes and would write to the Company offering land for sale. A great deal of competition existed between land owners and between the other railway companies to gain

access to a region. Along the prospective route land was reserved, the right-of-way purchased and then from the reserved blocks, townsite locations would be considered. The local Land Inspector was empowered to establish and promote incentives to draw business to the Company's townsites; for example, free sites were offered for hotels. By the post-boom period the Company recognized that it had created too many townsites as evidenced by the slow lot sales in many branch line townsites.

The CPR established the precedent for townsite surveys as an integral part of an overall economic development policy. The contribution of the CPR to urban development was its townsite selection, differentiation between centres and the spatial development patterns which resulted from its goal of creating traffic for its line. A rough hierarchy existed between its towns and villages and the mere presence of the railway guaranteed a townsite's survival. The Company operated in an arbitrary manner regarding the location of its townsites but appeared to be flexible in providing local facilities such as parks, hospitals, and schools if residents so requested. The townsite business was lucrative and with the boom years, the Company appeared to lose sight of its initial operating strategy of urban development coupled with hinterland productivity. Profits from land sales became the dominant development strategy.

Canadian Northern Railway

—The railway of William Mackenzie and Donald Mann began in Manitoba in 1896. The Canadian Northern (CNoR) took its shape, according to D.B. Hanna,

> From a series of disconnected and apparently unconnectable projections of steel, hanging in suspense, a continuous track was found, trains ran on it, and all the organs of great commerce began to function.[29]

The CNoR prairie lines were built in conformity with well defined principles. The first was to build as little mileage as possible through areas of poor development prospects. Secondly, lines were built and equipped to serve the immediate traffic needs with the potential for upgrading as required. Finally, the CNoR developed a strong network of branch and feeder lines on the prairies prior to building its transcontinental connections.[30] The railway line is illustrated in Figure 1. Mackenzie and Mann's primary concern initially was branch line construction with the intention of lowering freight rates.

Little information exists on the precise organization and policy in townsite development used by Mackenzie and Mann. Most of their initial townsite subdivision activities were under Mackenzie and Mann Co. Ltd.(incorp. 1904), the parent track-building company. Townsite sales were handled by Davidson and McCrae, a Winnipeg-based company which included a number of American land agents who had been successful in handling railway lands in the United States.

In 1913, Mackenzie and Mann transferred to Canadian Northern Town Properties Ltd., all titles to their townsites in return for the debenture issue of that company.[31] In addition to Davidson and McCrae, townsite sales were also offered to Terminal Cities of Canada Ltd. and to various other townsite sales agents.

The following townsite development cycle was employed by the Canadian Northern Railway. First the route was selected and prospective townsites would be noted. Attempts would be made to purchase those sections involved but uncooperative people could be bypassed. Slight locational changes were known to ruin a political enemy in an age when men who were prominent in politics were often equally prominent in land speculation. Numerous townsites were developed with the owners on a half-interest basis. With the site secure, the townsite would be surveyed by company surveyors,[32] plans approved, registered and lot sales could begin. Sales were handled by Davidson and McCrae. Decisions regarding the choice of which townsite blueprints and which plans were to be registered, were made based on the input from the agents.

A substantial body of correspondence exists between various agents and the Company regarding the process of land sales. Each land agent was allotted a choice of ten lots/block by Davidson and McCrae. If sales were sufficiently brisk, Davidson and McCrae would request that

the Company have another subdivision surveyed and opened for sale.[33] If prospects were poor, the agents then refused to select any lots. The prices were determined by inspectors in the field who also relayed information regarding sales and the potential of the region. Attractive sites were offered at low prices to some businesses, such as the Bank of Commerce and Crown Lumber, to draw desired services into new towns.[34]

Little of the correspondence deals with company townsite layout policies. Numerous complaints were registered regarding poor sites since often lots were chosen site unseen. Dense scrub and bush limited lot selection in Vegreville for example, and accurate lot descriptions were impossible to establish. Land selected in scrubby slough-ridden country "unfit for building purposes" was exchanged for more suitable land elsewhere.[35] After extensive correspondence, lots on the spillway valley hillside deemed unsaleable at Big Valley were exchanged for flat lots in the townsite.[36] Many other examples exist of slow land sales due to wet sites. The power of land speculation appears to have predominated in any decision making.

Mackenzie and Mann established 517 towns in Manitoba, Saskatchewan and Alberta. While no formal townsite department was established, lot sales were handled efficiently by Company agents. Townsite location appears to have been determined more by economics than by geography.

Price and the lack of encumberances determined the location. Though an organized system was in place, townsites were located on unsuitable land which had been obtained at preferred rates. The Company relied on its individual agents for information without checking the information for accuracy. At any rate, the correspondence indicates that making money through the rapid and continued sale of lots was the priority. Mackenzie and Mann ran their townsite business the same way they ran their railway. They built what they needed to suit the demands of the community at the same time maximizing their returns with a minimum of effort.

Grand Trunk Pacific Railway

At the same time that Mackenzie and Mann were building their branch lines on the prairies, the Grand Trunk Railway of eastern Canada was looking to extend its system westward. The policies of the Laurier government for the rapid settlement of western land appeared to be fruitful by 1902. The Grand Trunk Pacific had the support of Laurier while Mackenzie and Mann were supported by Sifton, Oliver and other westerners. Laurier was determined to deal with the Grand Trunk because he thought the new transcontinental would benefit the Liberal party politically in the same way that the Conservatives benefited from the CPR.[37] Most members of his cabinet wanted the two companies to work together, one operating the western section and the other

the eastern part of a transcontinental system. A plan was proposed by C.M. Hays, general manager, to force Mackenzie and Mann out of the transcontinental field. Hays was unwilling to cooperate with Mackenzie in traffic exchange agreements and wanted either to buy out the Company or to starve it out in order to gain control of its running stock.[38] The federal decision to aid the GTP in its western line construction meant that the Canadian Northern was forced to find an eastern route rather than coming to an agreement with the Grand Trunk Pacific. The railway company route is illustrated in Figure 1B.

When it became clear that the GTP would be moving westward, that Company borrowed its townsite operational plan from both the Canadian Pacific Railway and from several mid-western American railway companies. Townsite development was to be organized in an "orderly and scientific manner".[39]

A great volume of correspondence exists on how the Company proposed to organize the survey and sale of its townsite lands. American railways and land companies[40] were canvassed to establish the American experience in townsite development. From the correspondence with the Lincoln Land Co. came these observations:

> We had them platted - we were very careful to go over the ground ourselves and determine where we wanted to make the business center of the town and where the residence portion should be. We exercised as much care as was to our demand to determine these conditions, then after having the town surveyed and platted we were very careful

> to schedule what in our judgment should be the price per lot...[41]

Several options existed for the organizational framework of townsite development. The first was to form a townsite development company, as a parallel company to the railway company, which would organize and sell the townsites with the financial benefits accruing to the railway. The second was to sell all the townsite business to a company which would handle the sale of the properties on a commission basis and would bear the advertising costs while the railway would do the platting, register plans, pay taxes, etc.[42] The third strategy was to

> handle all our lots through our Land Commissioner until...we have secured a good nucleus in all these towns, gotten our money back and reached the point where sales will lag at which time... the remainder of our townsite possessions could be sold outright to some company or the exclusive agency given to a company.[43]

It appears that the third strategy was the one adopted by the Grand Trunk Pacific.

The price of lots was fixed by several of the Company executives after reviewing the prices of lots in similar situations on other railway company lines. Prices varied according to the location of the lot and whether it was for residential or commercial purposes. Most lots were priced at $100.00, with prices varying from $75.00 to $400.00 per lot depending on the town. Marketing of lots became a big issue in 1908 so that the company could recoup "the total expenditures made to date in connection with the purchase of

lands."[44] Hays wanted to see a more aggressive marketing campaign using "five or six men of experience in these matters to promote the sale of the lots as rapidly as possible at Winnipeg, Edmonton, Vancouver, Victoria, St.Paul, Minneapolis, Kansas City, St. Louis, Chicago, New York and Boston."[45] It is not clear whether such an extensive marketing strategy was employed but the Company apparently enjoyed healthy lot sales prior to World War I.

The amount of land acquired for each townsite was 640 acres, and 2,560 acres was acquired at each divisional point. This acreage was determined by arrangement with the Minister of the Interior. The total number of lots surveyed for all townsites in today's Prairie Provinces, was 13,826 lots. In 1909 5,742 lots were surveyed in 28 townsites by one surveyor - S.L. Crerar DLS. The actual area of most townsites was 29.96 acres while divisional points varied in size but averaged 69.39 acres.[46] The unsubdivided acreage at each townsite was held for future development so that the Company controlled all land subdivision at each site. This undeveloped acreage was to be leased to farmers so that each town would be surrounded by an active farming enterprise.

As a result of its American research, company officials expressed concern regarding the laying out of its towns. Philips traveled and researched the American townsite experiences and raised two issues regarding the Grand Trunk Pacific organization. He questioned the use of land

surveyors who had not "had any special experience in laying out towns" and thus would not realize the "topographical advantages that (are) present in each particular area".[47] Secondly, the Company was considering the use of standard town plans in order to facilitate easy layout. Philips noted that the policy's "practical application might not result in the best interests of the Townsite Co., owing to the varying topographical conditions in that number of towns."[48] The Company adopted a program for the use of standard plans for many of its mainline towns but abandoned the policy for its branch line development.

The GTP was the only railway company to use a primitive form of zoning in its townsites. Zoning can be defined as a land allocation system within which individual tracts or zones are identified as having some preferred planning goal or particular land use.[49] The railway company used a two-pronged approach for land use control. Firstly, activities which were considered deleterious to the townsite, such as blacksmith shops or livery stables, were not allowed to operate in certain portions of the town.

> The intention is not to have these buildings, which are objectionable in a townsite placed on the street facing the station or on any of the principal streets of the town.[50]

A certain area was marked on the townsite plan as "Livery Area" as seen in Figure 5. Secondly, the Company established a Building Restriction Area within the boundaries of which buildings of a certain specified value

Figure 5: GTP Standard Plan Showing Building Valuation Areas.

Source: PAC, RG30 Acc. No.1T617A49, GTP Correspondence, Ryley to Philips, May 10, 1909.

This figure was removed due to microfilming problems. The figure illustrates the location of the building valuation area, the approved location for blacksmith and livery shops and the lots sold.

were to be erected within a set time period. The valuation of $1,000.00 or $2,000.00 per building depended on the town. The location of the building valuation area is shown in Figure 5. This structure clause was found to be unworkable in towns where land sales were slow. The clause was subsequently altered in 1909 and became a discretionary clause based on the Land Commissioners' assessment of town viability. Lots outside the building restriction area carried no provisions limiting or controlling building construction. Within the building restriction area, hotel construction was dependent on company approval. These restrictions are noted on the Application to Purchase Town Lots contained in Appendix II. Warehouses and industries were not governed by any rules but company policy favoured their location on the railway right-of-way.[51]

The building restriction policy conformed with the Company's 'orderly and scientific' approach to townsite development. Scientific meant that policies regarding land division and disposition were researched in order to establish the most suitable means of handling the land. A formal organization was needed for the orderly disposition of the land according to a systematic, business-like method. The precise number of lots from each acre of land was known and thus profits could easily be calculated using various base prices. The Company was concerned about the appearance of the town, realizing that a prosperous looking town would

attract more customers. The Company thus took tangible steps to create a certain image for its town. Town beautification through tree planting programs were also proposed for the unused portion of the railway right-of-way. Though the Company bought land on both sides of the track, the town was laid out on one side in order to prevent the growth of level crossings. The Company was concerned that growth would not occur in an orderly pattern without the regulations.

Branch line development by the GTP began in 1910 following the same strategy which had been established for its mainline. At this time the Company began using a policy of half-interest in new townsites in response to the uncertainty regarding the traffic potential of sites becoming places of importance. Often owners of prospective townsites would not agree to a sale unless the Company agreed to construct a station. Conversely the Company policy was to build a station only when there was sufficient traffic to warrant doing so.[52] The Company would make no guarantees and often used the lure of a potential station location to acquire land. The Transcontinental Townsite Co. reached an agreement with the GTP to purchase lands for townsites on all branch lines. The promoters were also to place artisans and tradesmen in their towns, as well as to locate settlers in the vacant agricultural land along the line.[53]

By 1912, the GTP was concerned about the viability of some of its towns. Directives were issued stating that if 160 lots could not be sold, the town should not be placed on the market. The Company policy subsequently was to survey four blocks, but if the demand was only for forty lots, then a plan with that number was to be registered. When it became necessary to enlarge the townsite, then a new plan was to be registered for an extra eighty lots. This enabled the deed to be given to the purchaser without delay and saved taxes on the property not registered.[54] The Company also implemented a policy of subdividing unsold town lands into acreages of two to ten acres in an effort to dispose of its lands. By 1915, the Company wanted to cancel such subdivisions due to the lack of sales and high taxes owing on the property. It faced considerable opposition from towns and municipalities which feared the decrease in their revenue from a reduced tax base.[55] The Company was in a position where economics dictated that it rationalize its holdings in the face of opposing municipal pressure to maintain its land base in the towns that it created.

The Grand Trunk Pacific provides us with the most comprehensive view of the townsite development process. Company policy reflected an 'orderly and scientific' approach to land subdivision. The Company established its policy after conducting research into parallel American experiences. Site and situation were considered as integral

elements of the townsite locational strategy. The Company was innovative in its approach to land use. It pioneered the concept of zoning by regulating particular functions to certain areas prior to the enactment of any planning legislation. This concept does not appear to have been practiced by the other companies. The Company used a standard plan both for its ease of survey and its capability for uniformly applying building restrictions. The Company placed 102 townsites on the market on its mainline from Winnipeg to Prince Rupert and an additional thirty-nine were developed with the Transcontinental Townsite Co.; thus its impact on townsite development was substantial.

Surveying Instructions

Land surveying in Alberta was carried out by Dominion Land Surveyors until 1912. With the incorporation of the Alberta Land Surveyors in 1912, surveys were subsequently carried out by provincially certified surveyors.

The Dominion Land Survey was organized in 1871 to survey the newly acquired Northwest Territories. While the major focus of the Survey was to establish rural townships for agricultural settlement and the construction of the railway, the Survey also conducted settlement surveys where requested and collected information regarding disputed claims. Subsequently, in 1874, only commissioned Dominion Land Surveyors(DLS) were those who passed the appropriate

examinations and could be employed as surveyors in the Northwest. Many of the first townsite surveyors (M. Aldous, O. Klotz) had been employed by the Survey to run baselines, meridians, and to make notes on the condition of the soils and terrain.

Guidelines were issued by the Surveyor General in the Manual of Instructions regarding surveying methodology. The earliest Manuals of 1871 and 1881 contained no instructions for townsite layout. The first guidelines regarding townsite design appears to be in the 1905 edition. The basic features of these guidelines govern street and block dimensions, direction of streets, topography, the main street, and systematic street naming. The instructions could be modified according to the discretion of the surveyor to suit circumstances as required. The 1913 Manual repeated earlier instructions, elaborated on lot dimensions and showed a greater flexibility in block sizes.[56]

The Manuals reflect the existing body of knowledge and practice employed by land surveyors in Canada. Townsite layout guidelines were vague and left the inclusion of any additional design elements to the discretion of the surveyor. The square grid forms the base for general townsite layouts. Other plan arrangements were viewed as being difficult to use due to their increased complexity of survey.

Research through Pearce's papers revealed comments in

1913 by the Director of Surveys, C.A. Charlesworth, regarding curved subdivisions. Charlesworth saw curved subdivisions as being undesireable and to be avoided, thus "in case re-subdivision does occur there will be no complications in regard to irregular streets".[57] Charlesworth felt that the owner of a particular parcel would not concern himself with the general layout but was only concerned with dividing his own property. These comments present the contemporary attitude to land subdivision where utility was the predominant concern of the day. While isolated attempts were made to incorporate ideas regarding civic beauty and urban design, they had little impact on the conservative attitudes of the surveying profession which followed the age-old rule of economy and efficiency of design.

Planning Legislation

Interest in issues regarding civic beauty, sanitary reform, housing and the need to control speculative development led to the development of the town planning profession in the 1900s. The concern of some of the professionals in surveying, engineering and architecture was for the "rational application of scientific principles to the management of urban society."[58] This concern was formalized by the federal government with the establishment of a Town Planning Branch within the Commission of

Conservation, Department of Interior and the hiring of British planner and engineer Thomas Adams as its planning expert. Town planning was seen as one of the ways forward to social progress - beauty, health and convenience were to replace ugliness, disease and chaos.[59]

While the roots for the North American planning profession were initially tied to civic beauty concepts, the major issues soon became efficiency, science, zoning, parks, and transportation. Canadian planning represented a blend of both American and British traditions with emphasis on a concern for housing; a belief in scientific humanism rather than merely in science; zoning for public health rather than efficiency alone; and support for state intervention.[60] Canadians were more willing to allow a marked degree of government planning and intervention in the social and economic sphere than their American counterparts.

Formal provincial planning legislation was introduced in Alberta in 1913 with the Town Planning Act in response to popular interest in urban beautification and demands by the public to control land speculation. Visiting experts leveled extensive criticism at the rampant speculation and the standard use of the grid as unacceptable and undesirable urban planning. The initial town planning legislation attempted to provide a coordinated approach to "traffic, sanitary conditions, amenity and convenience".[61] The planning legislation applied only to undeveloped land on the

urban fringe or to new places. It was conceived as a means of imposing efficiency and order to urban expansion to enhance the happiness and well being of its residents.

The Public Works Act(1906) contained earlier regulations regarding land subdivision. A secondary regulation was introduced in 1913 under the Public Works Act which specified that 5% of a subdivision plan had to be reserved for public parks and schools.[62] This legislation had an impact on subsequent plans which incorporated the Department of Public Works(DPW) Reserve as an integral part of the plan.

Many municipalities began an approval system for new subdivisions prior to the introduction of the 1913 planning legislation in an attempt to maintain some control over the subdivision process.[63] This municipal input appears to have had little control over the speculation in or design of subdivisions. At this time the Municipal Affairs department was created in response to the rapid growth of urban communities and the need for coordinated standards in servicing and facilities. In 1913 urban affairs thus were differentiated from rural affairs. Change in planning legislation in the 1923 established the practice of government scrutiny of plans to ensure compliance with the regulations and to confirm market necessity.[64] This was coordinated by the Public Utilities Commission until 1937.

Conclusion

Townsite development in the Northwest had its early roots in the policies of the Hudson's Bay Company and the federal government. These two groups provided the initial urban form which was a reflection of the developers' requirements. The resulting form was plain, simple and massive one-section subdivisions containing nearly 8000 lots. The impact of Sir John A. Macdonald as Minister of the Interior seems substantial. He had set ideas on urban form and, for example, is documented as speaking out against very wide streets.[65] Deville, as Surveyor General, was well read and knowledgeable about various ideas current in urban form. That these ideas were not incorporated into many western plans is a reflection of the national land policy which favoured rapid settlement. Pearce's role as guardian of the conventional wisdom in land surveying and a confidant to federal perceptions appears to have been substantial.

The railway companies certainly viewed land as a resource and as a marketable asset. The CPR townsite development policy appeared to evolve through time and space. The mainline townsites were developed by the Canada North West Land Co. in a practice which paralleled the policies of American townsite companies whereby financial benefits accrued to the railway. Subsequently the CPR established its own townsite department to acquire, survey and sell lots. The Canadian Northern, in contrast, had its

land sales handled by a separate company on a commission basis while the railway company retained control over the layout or form of the townsite. The Grand Trunk established its own department to handle its townsite business initially with subsequent marketing to be handled by agencies as sales lagged.

All of the railway companies followed a similar cycle of development. The railway would carry out a reconnaissance for its prospective line. During this reconnaissance prospective station sites would be identified. The railway line segment would be surveyed and station locations would be established. Once the site was noted then purchase agreements were made with the owner, half interest agreements were made with the owner, or the location of the station would be changed to a more favorable site. Once the site was secured, then the townsite would be laid out. All railway companies had a hierarchical arrangement for their townsites based on traffic requirements. Townsites only became 'towns' when they obtained stations; remaining as a siding revealed the corporate perception of poor potential viability.

The Grand Trunk Pacific was the only company to have a coordinated townsite policy. It applied its policies in an 'orderly and scientific' manner in order to present a town that was functional and attractive. The Canadian Pacific Railway evolved to a coordinated land policy but still does

not appear to have had as comprehensive a townsite policy. In contrast the Canadian Northern policy was based on maximizing its return. As a result, many of its sites were located on poorly drained sites where the land could be obtained cheaply. In many cases lots were sold in poorly located townsites with enough pressure from the agent.

Each of the railway companies had a different perception of townsite development policy. They had a common goal of securing maximum profits in the fastest and cheapest way. In total some 800 towns and villages in Western Canada owe their birth and existence to a railway company. Collectively they have had tremendous impact on the urban form of the Canadian West.

Footnotes

1. Northwest is a general term for the area which became the Northwest Territories and the Province of Manitoba at Confederation. It refers to the present day provinces of Alberta and Saskatchewan.
2. James B. Hedges, Building the Canadian West: The Land and Colonization Policies of the Canadian Pacific Railway, New York, Macmillan, 1939, p.4.
3. J.S. Galbraith, "Land Policies of the Hudson's Bay Company: 1870-1913," Canadian Historical Review 33(1951), p.1. The land agreement included one twentieth of the fertile belt, a maximum of 50,000 acres around its trading posts, plus a cash payment of 50,000.00 pounds.
4. Galbraith (1951), p.6. See also H. Bowsfield ed. The Letters of Charles John Brydges, 1879-1882, Winnipeg, Hudson's Bay Record Society, 1977, p. xxxviii. Brydges was familiar with railways and their impact on underdeveloped areas, the place of patronage, and speculation. He was also a confidant of Sir John A. Macdonald.
5. Information largely based on work of Palliser who delineated the Arid Central Plains area as unfit for agricultural settlement and a fertile belt. Refer to Figure 6 in Chapter 4 showing the Prairie and

Parkland geographic regions.

6. The river-lot is a French Canadian form of land subdivision composed of long narrow lots, aligned to a watercourse, and used for agricultural purposes. For a summary of the characteristic features of these and later township and range survey applied over the Prairie Provinces, see W.C. Wonders, "The Influence of the Surveyor on Rural Settlement Patterns in Canada," Terravue, No. 1, Autumn 1982, pp. 15-26.
7. H.J. Selwood and E. Baril, "The Hudson's Bay Company and Prairie Town Development, 1870-1880," in A. Artibise ed., Town and City ,Canadian Plains Studies 10, Regina, University of Regina Press, 1981, pp. 65,75. Dennis supervised town lot surveys until 1882 when he joined the Canadian Pacific Railway. Montague Aldous replaced him until 1907.
8. J. Gilpin, "Land Development in Edmonton," in J. Foster ed., The Developing West, Edmonton, University of Alberta Press, 1985, pp. 155-157.
9. Provincial Museum and Archives of Alberta (hereafter PMAA), DLS Correspondence, Letter from Minister of Interior to McVittie, July 27/83. "The site of the townplot and the part which is to be subdivided into lots will be pointed out to you by the officer in command of the Mounted Police at Ft. McLeod."
10. PMAA, DLS Correspondence, Major Crozier to Deville, August 21/83. The concept of a riverside drive was incorporated into subsequent issues of the Manual of Instructions (1891).
11. PMAA, DLS Correspondence, Deville to McVittie, Sept.5/83.
12. PMAA, DLS Correspondence, Deville to Vaughan, Apr. 12/84.
13. Under the terms of agreement with the Government of Canada, the CPR was entitled to the odd-numbered sections along its mainline from Manitoba to the Rocky Mountains.
14. PMAA, DLS Correspondence, Deville to McVittie, Apr. 12, 1884.
15. PMAA, DLS Correspondence, McVittie to Deville, Jan. 16,1885.
16. University of Alberta Archives (hereafter UAA), Pearce Papers, Wm. Pearce to Burgess, July 23, 1889.
17. UAA, Pearce Papers, Telegram Pearce to Burgess, July 22, 1889.
18. S. Fleming, Report on Surveys on the Canadian Pacific Railway, Ottawa, 1877, p. 95.
19. Hedges (1939), p. 85.
20. Canadian Pacific Corporate Archives(hereafter CPCA), Van Horne Correspondence, Scarth to Van Horne, May 20, 1883.
21. Hedges (1939), p. 85. The towns with such an arrangement were Regina, Qu'Appelle, Virden and

Moose Jaw; none of which are located in Alberta.

22. CPCA, Van Horne Correspondence, MacTavish to Scarth, Jan. 23, 1884(?).
23. Glenbow, Canada North West Land Co. Correspondence, Joint Townsite Agreement, June 27, 1902.
24. PMAA, DLS Correspondence, Department of Interior, Canmore townsite: Briefing notes, May 27, 1889, p. 8.
25. The rivalry at Calgary between government and land company sites was an example of this problem.
26. Wetaskiwin and Lacombe became divisional points due to the Calgary and Edmonton Railway branch line extensions to the east.
27. Glenbow, CPR Naismith Correspondence, Naismith to Cameron, Apr. 30, 1912.
28. Glenbow, CPR Naismith Correspondence, Apr. 30, 1912.
29. T. D. Regehr, The Canadian Northern Railway, Toronto, Macmillan, 1974,p. 75.
30. Regehr (1974), pp. 159-163.
31. Regehr (1974), p. 233.
32. Public Archives of Canada (hereafter PAC), RG30, Vol. 2980, Terminal Cities of Canada, Ltd. Correspondence, May 5, 1913. M. McLeod, Chief Engineer of the CNoR was the supplier of blueprints which indicates that the central office coordinated the survey and plan stages of the process.
33. PAC, RG 30, Vol. 2980, Terminal Cities of Canada, Ltd. Correspondence, Davidson & McCrae to Terminal Cities of Canada Ltd.,May 1, 1913, re. Drumheller.
34. PAC, RG 30, Vol. 2980, Terminal Cities Ltd., Branch line Development, June 5, 1913.
35. PAC, RG 30, Vol. 2980, Inspectors Report to Terminal Cities Ltd., Jan. 16, 1914.
36. PAC, RG 30, Vol, 2980, Terminal Cities Ltd. Correspondence, File 102-3.
37. Regehr (1974), p. 115.
38. Regehr (1974), p. 107. Running stock includes equipment such as the engines and various cars required to operate the system.
39. PAC, RG 30, Vol. 11617, Grand Trunk Pacific Railway Correspondence, 1911 Draft Prospectus, Apr. 18, 1911.
40. Companies contacted were the Lincoln Land Co., Eastern Oklahoma Railway Co. and the Atchison, Topeka and Santa Fe Railway.
41. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, U.C. Guss to H.B. Philips, July 24, 1907.
42. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, Morse to Hays, nd.
43. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, Morse to Hays, Nov. 11, 1907.
44. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, Hays to Morse, Apr. 27, 1908.
45. GTP Correspondence, Apr. 27, 1908.
46. PAC, RG 30, Vol. 11617 A-27, GTP Correspondence

Ryley to Morse, April 9, 1908,p. 1-2. All of the railway companies acquired more land than they needed for the townsite proper in order to control the future development of the town.

47. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, Philips to Hays, July 31, 1907.
48. PAC, RG 30, Vol. 11617 A-2, GTP Correspondence, Philips to Hays, July 31, 1907.
49. R.J. Johnston ed. The Dictionary of Human Geography, Oxford, Blackwell, 1981, p.374. Zoning usually refers to government or state regulatory planning duties.
50. PAC, RG 30, Vol. 11617 A-27, GTP Correspondence, Ryley to Morse, Apr. 9, 1908, p. 5.
51. PAC, RG 30, Vol. 11617 A-30, GTP Correspondence, Philips to Ryley, Mar. 22, 1909.
52. PAC, RG 30, Vol. 11618 A-53, GTP Correspondence, Ryley to Chamberlain, May 17,1909. The Company was required to pay the government one-quarter of the net proceeds from the disposal of townsite lands located on Crown lands.
53. PAC, RG 30, Vol. 11618 A-53, GTP Correspondence, Philips to Chamberlain, Jan. 31, 1911.
54. PAC, RG 30, Vol. 11618 A-67, GTP Correspondence, Ryley to Hays, Feb. 23, 1912.
55. PAC, RG 30, Vol. 11618 A-67, GTP Correspondence, Report to Directors, Sept. 21, 1915.
56. The Manual notes that blocks were to be 9 chains by 3 chains subdivided into 18 lots. One wider street was desirable in order to accommodate anticipated traffic. By 1913 lots generally were to be 50x120 feet with business blocks narrower.
57. UAA, Pearce Papers, Charlesworth to Pearce, June 24, 1913.
58. T. Gunton, "Origins of Canadian Urban Planning," City Magazine, Vol. 2, No. 3, 1982, p. 28.
59. G. Cherry, "The Town Planning Movement and the late Victorian city," Transactions-Institute of British Geographers, 4, 1981, p. 318.
60. T. Gunton, in A. Artibise and G. Stelter ed., Usable Urban Past, Toronto, McClelland and Stewart, 1979, p. 187.
61. Town Planning Act, Sect. 1(1), 1913.
62. Public Works Act Sect. 19, 1913. Sect. 64(a) deals with the subdivision of land.
63. This is evidenced by the municipal approval stamps for subdivisions at Stettler and Vermilion.
64. Public Utilities Act Sect. 142 (B), 1923. The Public Utilities Commission was replaced by the Town Planning Commission in 1937. PMAA, Acc. 65.74, Department of Municipal Affairs - New Plans, Nov. 8, 1928 "board must be satisfied that land will be or may reasonably be expected to be required for business purposes within a reasonable time.

65. PMAA, Acc. 85.34/194, DLS Correspondence, Deville to Burgess, 1889, p. 15 "bearing in mind the opinion expressed by Sir John against very wide streets."

Chapter 4

Townsite Form in Alberta

The Geographic Setting

The specific study region of this thesis is the province of Alberta (Figure 6). Alberta, located between 49° and 60° North latitude and 110° and 120° West longitude consists of a diverse landscape with many distinctive features. Several of the major continental physiographic components fall within its borders. The Rocky Mountains form its western boundary, in the south and east are the Great Plains, and in the north-east is the Canadian Shield. The province's spatial and temporal development, including that of its townsites, have been influenced by its varied geographic nature.

Topography and Soils

Nearly all of the province's arable soils are located in the plains which cover the southern three quarters of the province.[1] The glaciated plains[2] are covered by a till blanket which varies in depth from a few inches in high ground to hundreds of feet in old river valleys. Ground moraine has shaped the landscape into a gently undulating swell and swale topography. A more rolling surface with poorly developed drainage occurs in local areas of hummock

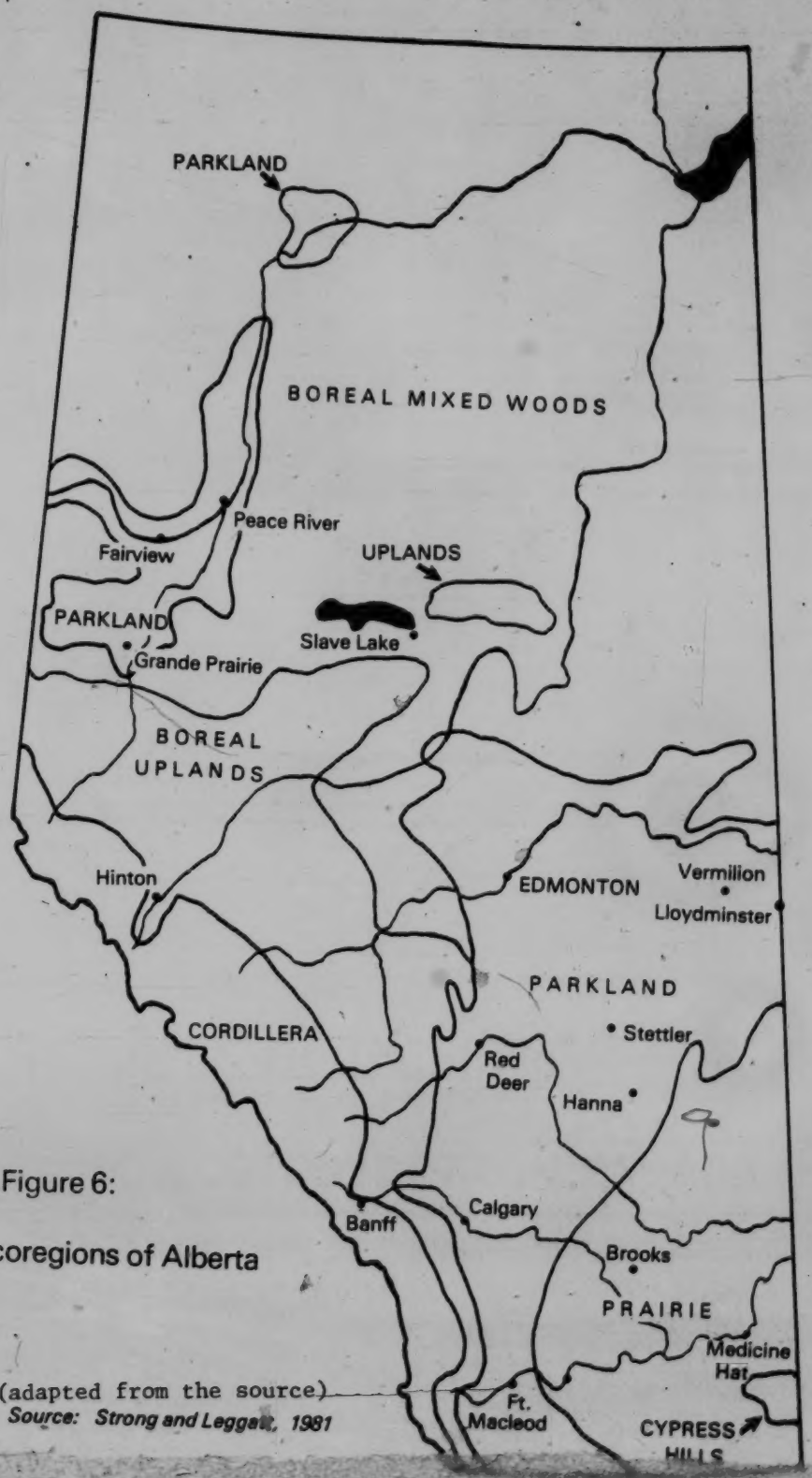


Figure 6:

Ecoregions of Alberta

(adapted from the source)

Source: Strong and Leggat, 1981

moraine. Cutting through the plains are long steep-sided flat-floored spillway valleys that carried away huge volumes of meltwater from the continental ice sheets. Meltwater lakes also ponded along the retreating ice margin. Almost all of northern Alberta, except the uplands, was covered by a layer of lake silts and clays. The northern portion of the province consists of an area of upland separated by large expanses of glacial lacustrine and more recent fluvial sediments resulting in varying local soil conditions. The Shield and Cordilleran areas contain thin, poorly developed soils as a result of geomorphic and climatic factors.

Climate and Biogeography

The climate of Alberta is marked by long, cold winters and short cool-to warm summers. The continental nature of the climate results in an variability in precipitation patterns and in the number of frost free days. Climatic data for selected Alberta locations are given in Table 1. Precipitation decreases from west to east and from north to south with corresponding differences in vegetation. The province can be divided into four major ecoregions - Prairie, Parkland, Boreal and Cordilleran - based on the interrelationship between climate, vegetation and soils.[3]

Prairie

The Prairie region (Figure 6) forms the northern extremity of the American Great Plains. This region is

Table 1: Selected Alberta Climatic Data

PLACE	MEAN JAN. TEMP	MEAN JULY TEMP	MEAN* GROWING DAYS	FF DAYS**	TOTAL PRECIP (mm)
Peace River	-20.4	15.7	1239.1	93	375.1
Edmonton	-16.5	14.8	1328.0	105	466.6
Vermilion	-18.4	16.5	1371.1	100	415.3
Lethbridge	-10.3	18.6	1775.6	124	422.7
Ft.McLeod	- 9.5	18.3	1723.5	125	433.9
Red Deer	-15.1	16.5	1406.7	109	459.8
Banff	-11.5	14.8	1081.4	89	471.0
Calgary	-11.8	16.4	1387.2	112	423.0
Brooks	-13.9	18.5	1707.5	130	372.7
Grande Prairie	-17.7	15.9	1296.6	116	453.3
Hanna	-15.6	17.8	1527.1	119	387.8
Hinton	-12.5	14.4	1099.3	63	501.8
Lloydminister	-18.2	17.5	1487.9	120	425.1
Fairview	-17.8	16.0	1321.0	119	446.6
Stettler	-15.2	17.0	1458.4	118	431.3
Medicine Hat	-12.6	19.9	1942.9	129	347.9
Slave Lake	-18.7	15.7	1212.6	90	475.4

Environment Canada, Atmospheric Environment Service, Canadian Climate Normals 1951-1980, Canadian Climate Programs, Vol. 2,3,4 and 6, 1982.

* Growing Season= number of degree days above 58 C.
**FFD= Frost Free Days

characterized by its grassland vegetation and relative absence of tree cover with the exception of hollows, valleys, and coulees. Both summer and winter precipitation are the lowest in the prairie region with an annual mean of 400 mm. of precipitation. High summer temperatures, low precipitation, strong winds and high insulation combine to produce high potential evapotranspiration values and a large climatic moisture deficit.[4] Soils in this region are generally Dark Brown and Brown Chernozems in well drained sites, with Brunisols, Regosols and Gleysols in poorly drained sites. Heat and the length of the growing season are not limitations for agriculture in this region. Moisture deficiency is the single most severe limiting factor. This region was identified by Palliser in 1857-1858 as a Desert and Palliser's name became associated with the idea of an arid zone unsuited for settlement, the "Palliser triangle". Irrigation and ranching are the major agricultural land uses of this region.

Parkland

The Parkland region is climatically and ecologically a transition zone between the grassland environment and the boreal forest (Figure 6).[5] Precipitation is more evenly distributed throughout mid-summer. The region has a mean annual precipitation value of 450 mm., two-thirds of which falls during the summer months. Temperature shows continental characteristics with a large daily range of

values and large annual variations. The Parkland region is characterized by its mixture of grassland, shrub communities and aspen stands. Soils are commonly Black or Dark Grey Chernozems with Gleysols at poorly drained sites. The Parkland region represents one of the most productive agricultural zones in Alberta. This potential for productivity was recognized by Palliser's expedition which referred to this region as the "fertile belt".

Boreal

The Boreal region covers the largest area of the province (Figure 6). It includes several subregions - the uplands, the foothills and the mixedwoods - based on vegetation type.[6] The mixedwood region contains 43% of the area of the province. The vegetation of the region is dominated by aspen, balsam poplar, jackpine, white spruce, and black spruce. Foothills regions include fir, with lodgepole pine and birch. The upland sites are dominated by white and black spruce stands. The Boreal region is characterized by Grey Luvisol soils with Gleysols and Organics at poorly drained sites. The continental nature of the regional climate is the most extreme in this province. More than 70% of the total annual precipitation occurs during the month of July which reflects the influence of the mid-Alberta storm track. This region has the coldest mean winter temperatures and the largest range between mean winter and summer temperatures. Agriculture is common at

the southern fringes of the region on dry sites. Tree harvesting occurs throughout the region, particularly in upland areas, where some of Alberta's most productive stands are located.

Cordillera

Conditions are highly variable in this region due to its complex topography (Figure 6).[7] Coniferous forests dominate the subalpine sites, while dry alpine sites are characterized by grassland vegetation. Strong winds, long winters, and summer coolness due to elevation influence the vegetation of the region. Regosolic and poorly developed Brunisolic soils are common due to the severe ecological conditions. Watershed management, recreation and wildlife habitat are concerns of this area. Much of this region is included within the jurisdiction of Federal and Provincial Governments in the form of parks and wilderness areas.

Settlement Potential

Numerous studies had been made and expeditions sent out by the British and Canadian governments in order to assess the agricultural potential of Alberta prior to the arrival of the railway. Nearly all of the studies favored a northern route, along the Parkland zone, for the railway. Well treed sites, numerous water filled depressions, and adequate rainfall were necessary to fulfill the settlers' needs. By the late 1870s, other studies[8] had indicated that the grassland area was not as hostile an environment as had

earlier been declared thus throwing Palliser's assessment into a questionable light. The southern prairie was characterized by its treeless sites, lack of precipitation and lack of on-site water. In turn, however, it was also easier to break land for planting in this region. The Canadian Pacific Railway chose the southern route for economic and political reasons, rather than for its greater agricultural potential. The grassland region was largely unsettled thus little competition existed for the control of townsites. Only one large river valley (South Saskatchewan River) crossed the railway route thus decreasing the costs and time for construction. A southern route secured the region as Canadian territory from potential American intrusion. The railway underestimated the dryness of the region as a deterrent to settlement.[9] The aridity of the southern region continued to be a problem for the railway until irrigation systems were established in the area.

Mountain sites were not generally viewed as favorable for townsites. Local mineral resources however sometimes created special circumstances. Coal companies chose sites which were located in wide valleys and on bench lands for their townsites. The location of major passes through the mountains and their access valleys were of great importance to railway companies in selecting their routes.

The Boreal region was not considered as suitable for agricultural settlement until after 1900. With the

exception of the Peace River area which is a parkland transition pocket, the region still remains relatively sparsely settled.

Townsite Dynamics

In order to understand the dynamics of townsite development, it is important to observe parallel experiences. Hudson, in his study of North Dakota towns over the years 1880-1920, provides us with a framework for observation of trends and themes in Alberta.[10] In the Alberta experience, little initial difference was noted from Hudson's model with the exception that North Dakota towns were planned and developed by townsite agents rather than by the railway company. In Alberta, the railway company would survey its route and locate siding sites at intervals along the line. Townsites would be located where stations were established in order to meet the traffic requirements of the region. Once the townsite was surveyed, plans were drawn and registered, then lots were sold. While the goal of the railway company was to serve the traffic needs of a town's hinterland, speculation on the growth potential of the town also played a role in railway townsite planning. The sale of town lots by railway companies was quickly perceived as a source of profit. With the entrance of competing railway companies and branch lines, speculative land subdivision became an important element in subdivision planning. Plans

which could easily be expanded were the norm.

Form

Only those plans were studied which were registered since lots could only be sold after the townsite plan was registered at the Land Titles office. Some 512 town plans were examined. A complete listing of plans is contained in Appendix I.

A typology of plans was created according to their layout. Initially, Hudson's[11] three forms - symmetrical, orthogonal and T-plan - were employed but these did not accurately fit the Canadian plans. As a result, a new typology was established which used the symmetrical and T-plans as the framework but provided for a greater variability in structure.

The major elements used to generate a form type were: the presence of a main street, the intersection of main street with the railway, and the location of commercial lots. A main street was identified by its dimensions [80 feet (24.4 m) or 100 feet (30.5 m)], by its name, and by the presence of commercial lots. Commercial lots were identified by their narrow width [25 feet (7.6 m) or 33 feet (10.1 m)] when compared to their residential counterparts [50 feet (15.2 m)]. The intersection of the streets with the railway, whether at right angles or at angles less than 90, provided another means of categorizing the town

structure.

In the resulting typology, nine forms were identified. They are: T-plan(T), its subset(F), railway linear (L*), highway linear (L), angular plan (A), crossing plan (X), I-plan (I), curved plan (C),and grid block (G). The forms are described in greater detail in Appendix III with accompanying examples of town plans. The six railway forms - T, F, I, L*, X, A - are illustrated in Figure 7 which depicts the standardized layout for each form. The non-railway forms - G, L, M - are discussed in Chapter 5.

The data were subsequently sorted by form type, owner, date, railway line/company, and surveyor, in order to correlate the information.

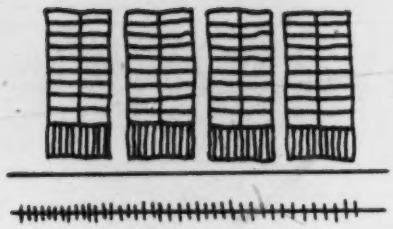
Discussion

The dominance of the railway company in townsite creation in Alberta cannot be disputed. By 1940, approximately 83% of all towns platted in Alberta had been laid out by the railway companies. The remaining 17% were platted privately by individuals, trading companies or religious organizations.

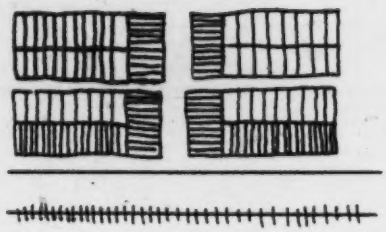
The various form types were analyzed by railway line. Figure 8 illustrates the number of towns in each of the six form types according to the railway line. It can be seen that the three major transcontinentals (Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railway) show a

Figure 7: Railway Townsite Form in Alberta

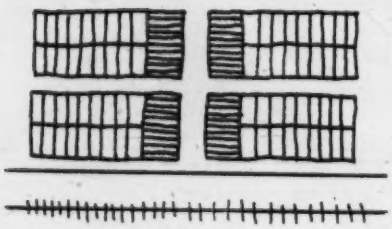
(narrow lots represent commercial use)



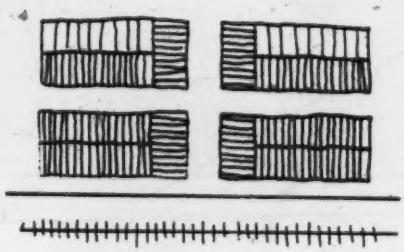
Railway linear plan



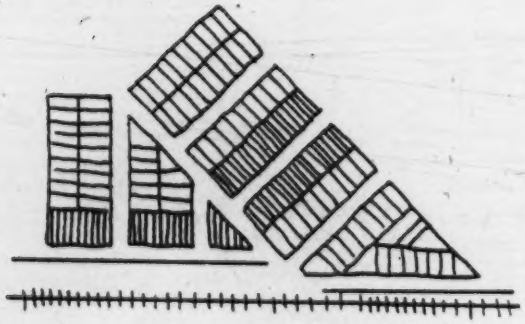
T-plan



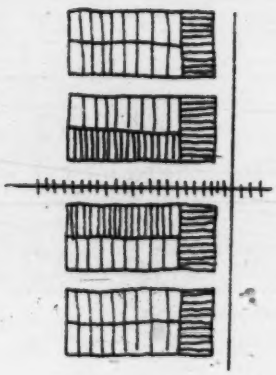
I-plan



Crossed T-plan

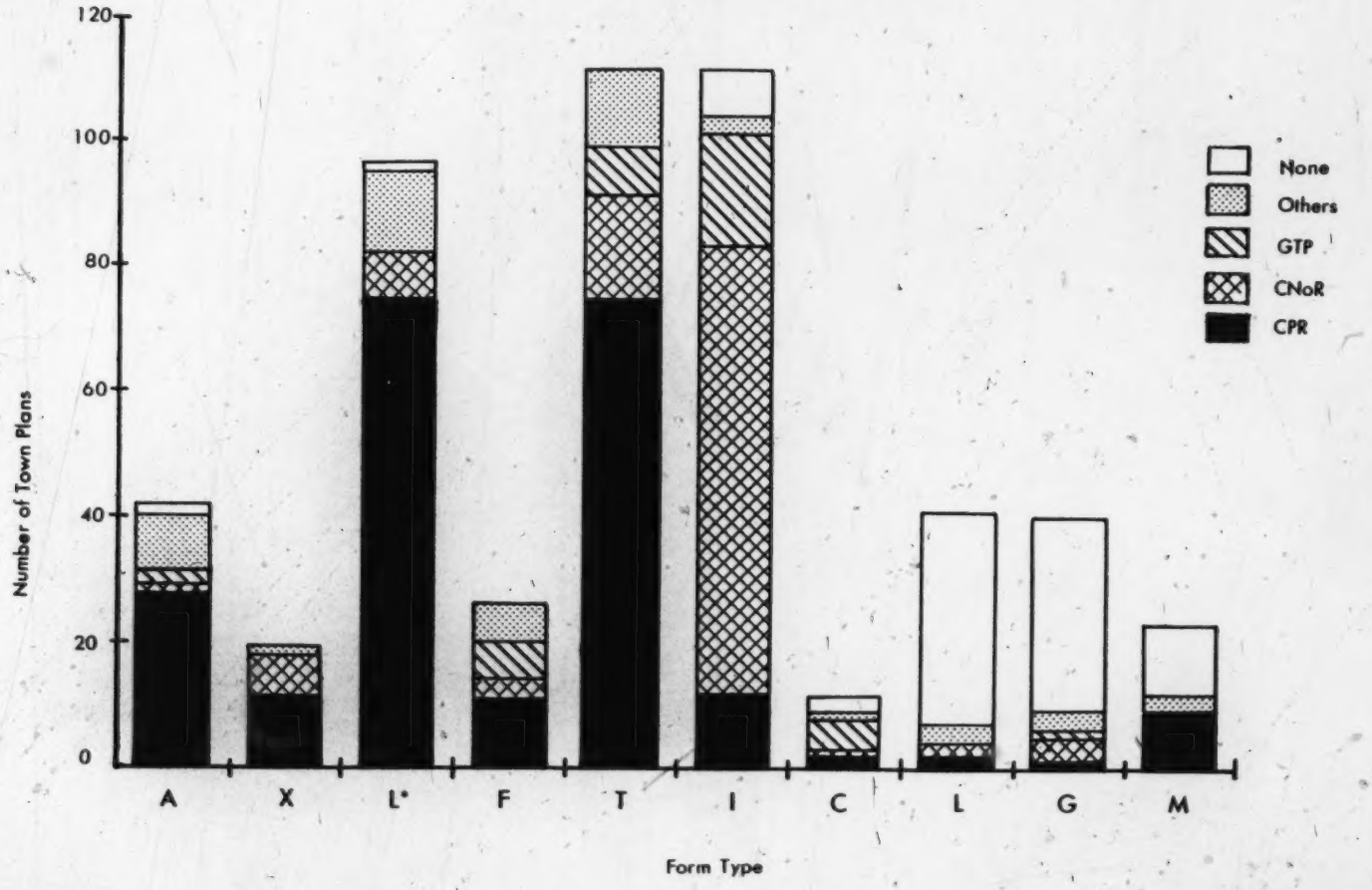


Angular plan



Crossing plan

Figure 8: Townsite Form Along Railway Lines



greater tendency toward the use of specific forms. The Canadian Pacific favored the angular, railway linear and T-plan. The Canadian Northern and the Grand Trunk Pacific favored the I-plan and the T-plan. The following discussion will first deal with the Canadian Pacific Railway and then the other transcontinentals. Spatial variations will be discussed in the context of each line.

Canadian Pacific Railway

The Canadian Pacific Railway was responsible for the layout of 47% of the townsites in Alberta and enjoyed a monopoly in townsite development in Alberta for over twenty years (1883-1906). During this period, the company laid out forty-three townsites along its mainline and subsidiary branch line - the Calgary and Edmonton Railway. Those early years illustrate the rationalization process through which the company progressed before settling on particular forms for its townsites.

A brief examination of the Calgary-Edmonton line reveals a tendency by the company to use either an angular, linear or crossing plan (Figure 9). Surveying on this branchline began in 1891 in order to connect Calgary with Edmonton and open the rich agricultural region of the Parkland region. The angular and crossing plans were used primarily before 1900. They were subsequently replaced by the T-plan and linear plan as the number of townsites platted by the company increased. The use of the angular

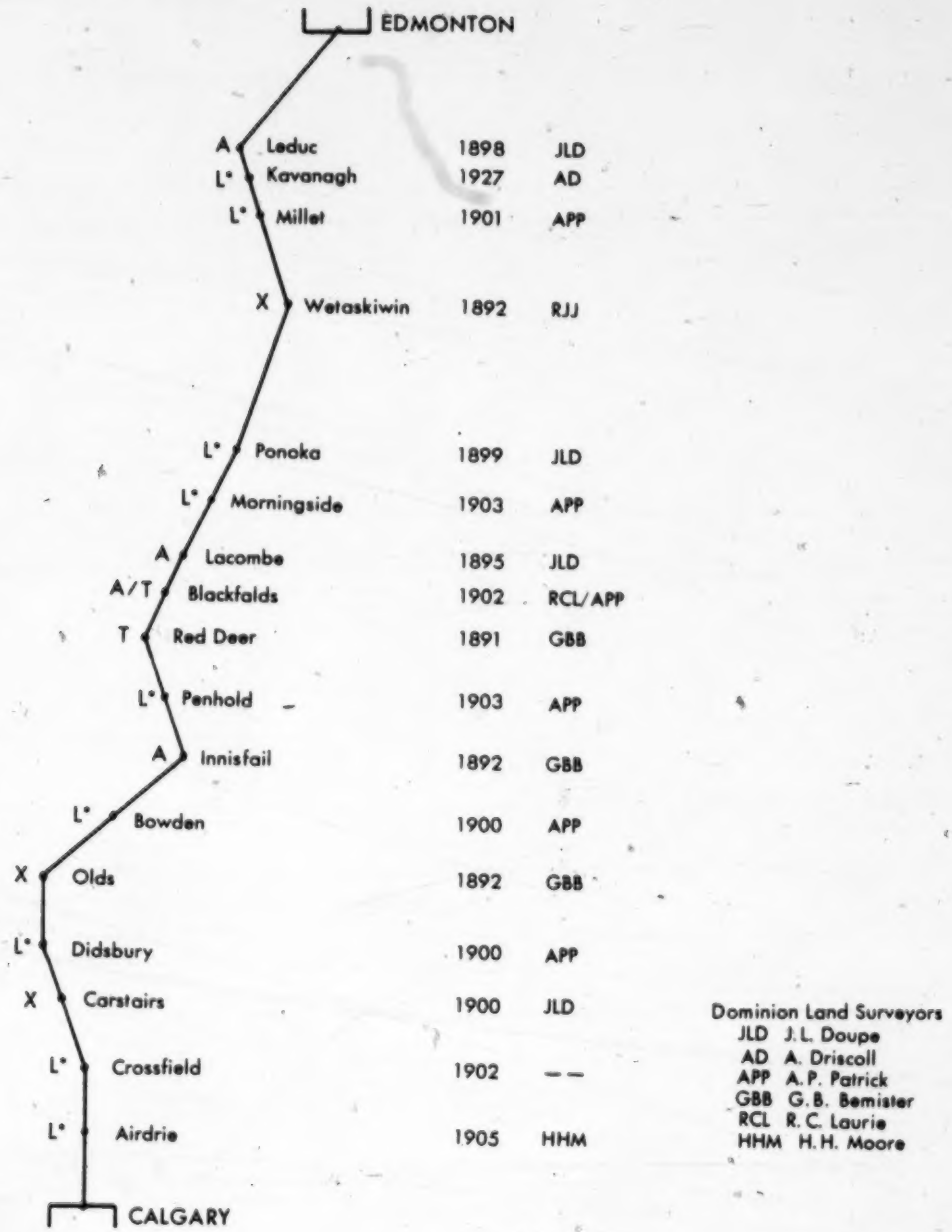


Figure 9: Calgary-Edmonton Railway Form Types

plan has meant that many of the towns contain triangular blocks in their central core, a realignment which parallels the section boundary and no clearly defined main street. The crossing plan meant that a larger plan could be laid out but the safety hazard of the crossing created a problem for access between the two parts of the town. Both forms were falling out of use by 1900.

The CPR does not appear to have had a clear policy on townsite layout as indicated by the variety of plans used in this period. Plan preferences appear to correlate with the Land Surveyor. The company used surveyors from its Land Department, such as J.L. Doupe, DLS or hired them on contract such as G.B. Bemister, DLS. Both Doupe and Bemister favored angular and crossing plans.

The linear plan became popular from 1901 on. It first appeared with A.P. Patrick, DLS, who was contracted to perform townsite surveys of sidings along the Calgary-Edmonton line. Patrick continued to survey for the CPR on a contract basis until 1910. The T-plan was first used in 1891 by G.B. Bemister, DLS for the plan of Red Deer but was not used again by the company until 1904. In 1904 Alex Taylor, DLS was contracted to survey townsites along the new Calgary-Edmonton Railway branchline east from Lacombe through Stettler. In these surveys, Taylor primarily used the T-form. The linear and T-plan thus were developed by surveyors as a fast and economical means of platting a

townsite.

On the eve of transcontinental competition, the CPR appears to have settled on forms which were easy to use and could easily be expanded. Town form appears to have been determined by the surveyor's interpretation of his instructions in the absence of a clear land policy. The company then adopted the forms, incorporating them into an informal policy for future townsite layouts. The CPR during the period of competition, entered into a massive town building program which was coordinated from 1908 on by its Land Department in Calgary. Its townsite surveys were carried out by the company townsite surveyor D.T.Townsend.[12]

The Other Transcontinentals

The Canadian Northern Railway was responsible for the layout of about 20% of the towns platted in Alberta. The Canadian Northern line entered Alberta at the northeasterly margin of the fertile parkland region. The company had a loosely organized land department to coordinate the survey of its townsites. The land department exhibited a marked preference for the I-plan along both its mainline and branch lines. The plan was used regardless of the surveyor, date or railway line involved. The size of town depended on the number of blocks platted rather than the use of a different layout to denote size. The exceptions were division points which were laid out in either a crossing or crossed T-plan

form in order to create a larger commercial area.

The Grand Trunk Pacific accounted for approximately 8% of Alberta townsites. As we have seen earlier, the company had a well organized Townsite Department which favored a standard plan for its townsites. The company chose the I-plan for its townsites east of Edmonton, while to the west, they were platted in a T-plan or crossed T-variation. The variation from east to west reflects a change in company policy from its standard plan to one of greater flexibility. The need for flexibility was due in part to the political uncertainty which the company faced regarding the construction of the western portion. Also the standard plan was not adaptable enough for the varying topography as the line traversed the Boreal region of the province.

The GTP expressed concern with the incorporation of "topographical advantages" in its townsite selection. Some of these included: a level site or one with a gentle slope; proximity to a major trail or road allowance; little wetland; not heavily treed but within proximity of building supplies; and potable water. These conditions were generally found along the eastern section of the mainline. In contrast, west of Edmonton the line traversed an area of varying topographical conditions. These included heavy bush, wet land and a high water table, extreme slope gradients in places and many river gorges. As a result the Standard Plan was abandoned, as it became apparent that each

site required individual attention. Fewer townsites were laid out on the western portion due to the decreased availability of sites and the lower settlement potential offered by the boreal-parkland transition zone.

Branch line townsites were often developed on a half-interest basis with private owners of the sites. These privately developed townsites were usually platted in the T-plan. The T-plan thus became the 'typical' form choice of land developers.

Surveyors had little impact on form in the case of the Canadian Northern Railway and the Grand Trunk Pacific. The form was established by the company prior to the survey. The Grand Trunk Pacific appears to have used a plan book where plans could be copied in the appropriate size required. Surveying was carried out by contract for the Grand Trunk Pacific[13] while the Canadian Northern employed its own surveyors.[14]

Other Railway Companies

Many small local railways were also chartered during this period to serve a particular area of the province. Most of these were related to coal company operations (eg. Canada Central Railway) and to irrigation projects (eg. Alberta Railway and Irrigation Company). These companies laid out approximately 8% of the townsites in the province. All of these small companies were later integrated into the national railway system during the 1920s.

Little information exists on the townsite planning of these companies. It appears that contract surveyors were hired to lay out plans with a minimum of instruction from the company. Most commonly plats were in the angular, railway linear or T-plan categories. The majority were located in the southern portion of the province.

Spatial and Temporal Variations

The number of town plans registered by year at the Alberta Land Titles offices is shown by Figure 10. The data base was divided into its Northern and Southern Alberta Land Titles components in order to clarify variations between these parts of the province. Some 231 plans were registered from 1885 to 1940 in the southern office. Of these plans, 166 or 72% were registered prior to and including 1914. The beginning of World War I marks the end of one of the greatest land booms in Alberta history, thus it is a relevant cut-off date for analysis. In contrast only 51% of towns in Northern Alberta were registered prior to 1914. Figure 11 illustrates the distribution of urban forms in Alberta. The southern portion reflects a wide array of plans with the railway linear, T-plan, and I-plan accounting for 52% of the townsites laid out. In contrast these same plans accounted for 64% of the townsite in the northern portion.

This difference is due to the much earlier general

Figure 10: Total Number of Registered Plans Filed in Alberta

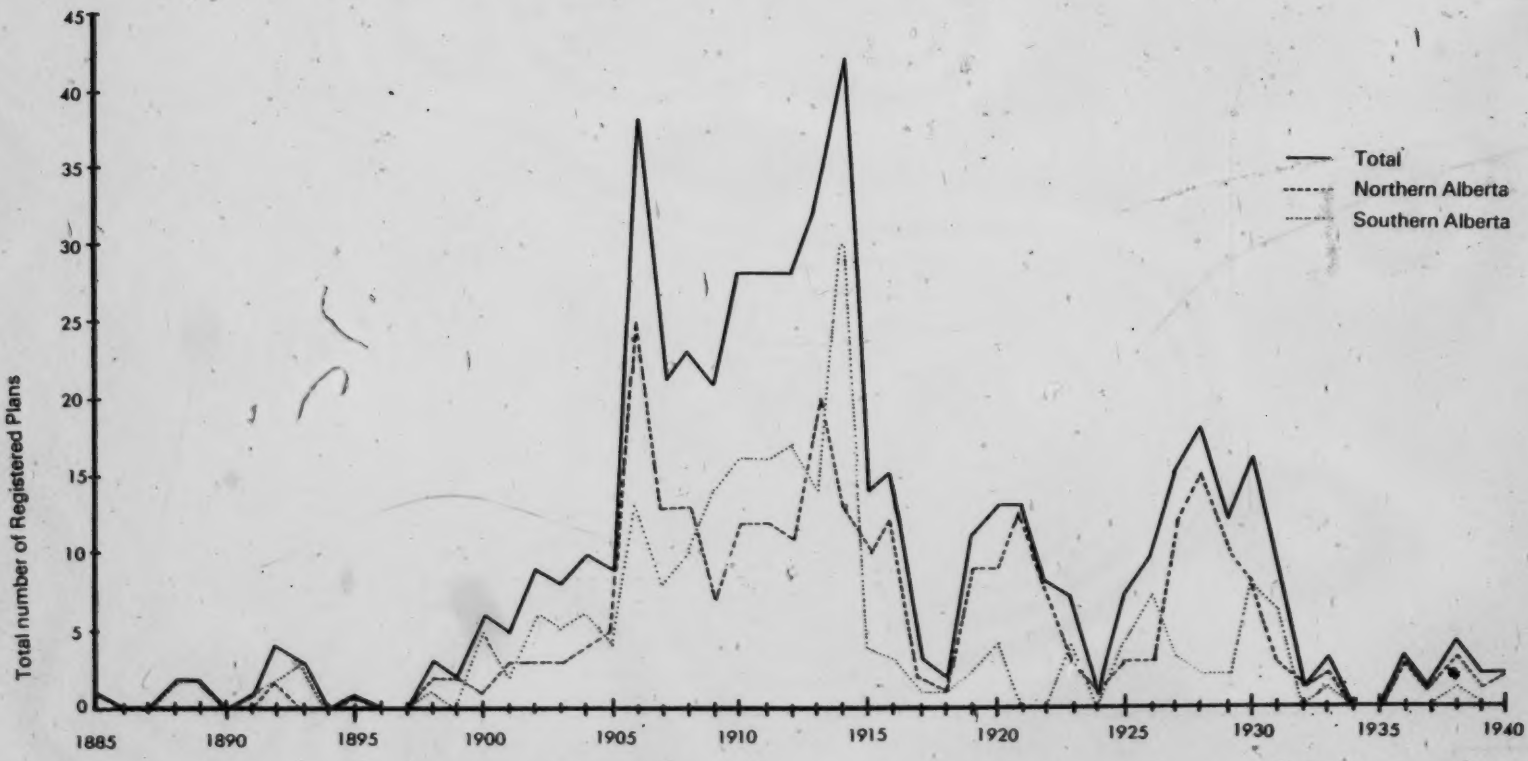
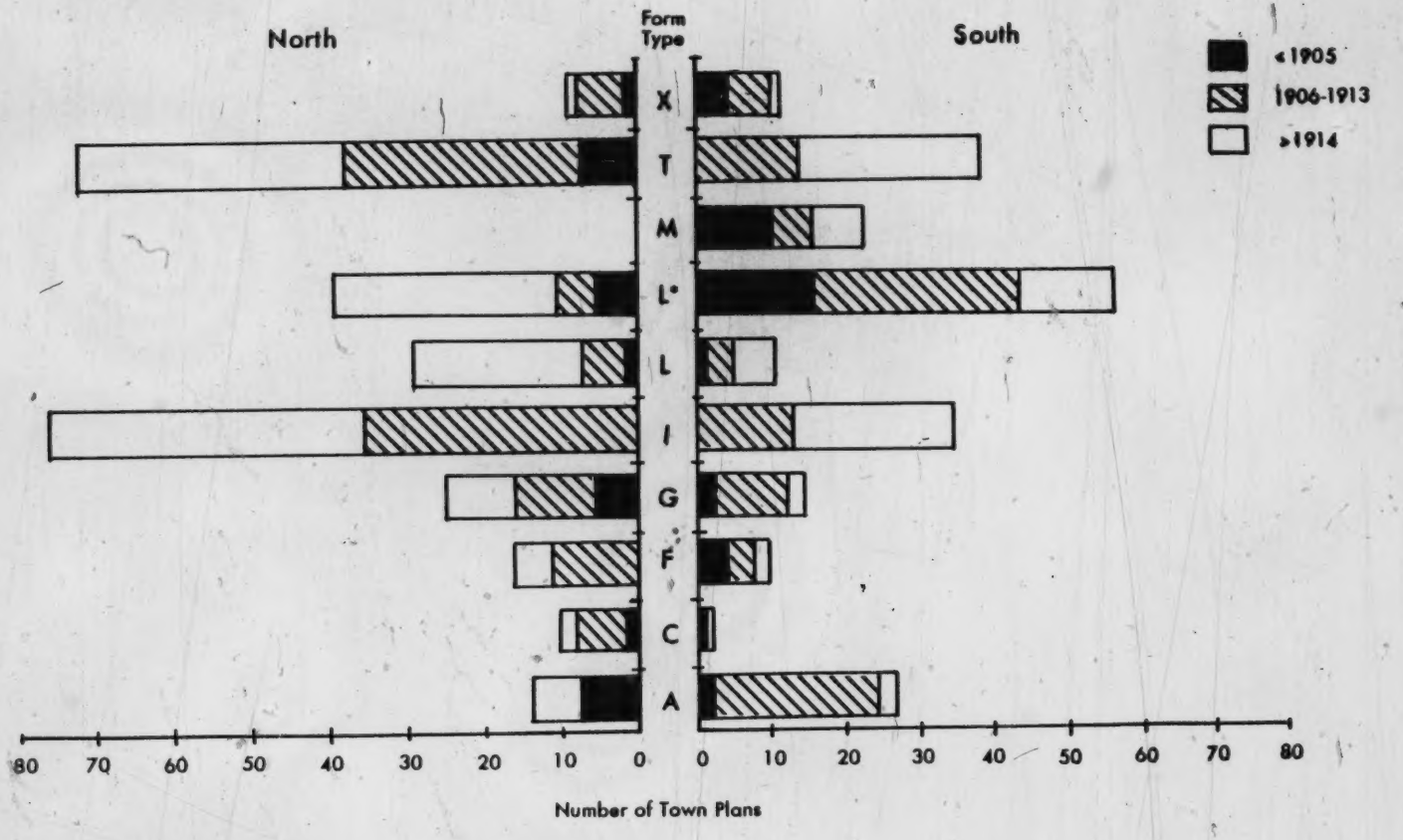


Figure 11: Urban Form in Northern Alberta and Southern Alberta



settlement which occurred in the southern part as a result of the route chosen by the CPR. The CPR monopoly in the southern region enabled the company to locate and plat towns as the market required at a much earlier date than those in the north.

Both the southern and northern plans did not always incorporate a main street into the plan. The angular and railway linear plans (31%) were split in their incorporation of a main street in the southern portion. A similar split was noted in northern plans for the crossed T-plan and railway linear categories (18%).

Plan Size

The size of the plans of the railway towns show a pattern that followed the speculative cycle. Large plans were laid out where the company involved perceived the greatest potential for development. The agricultural potential of the area, the resources of the region, proximity to other lines, proximity to other towns and rate of settlement were items under consideration by the company involved. Information on the potential of the region was gathered from the township survey reports, land agents and company Land Inspectors and Land Commissioners such as Wm. Pearce (CPR) and G.U.Ryley (GTP).

The Canadian Northern did not have an infrastructure of the same scope to garner its information. It relied on lot

sales information from its Land Inspectors and Station Agents and competition from other lines to establish its plan sizes. The Canadian Northern used plan size to reflect a hierarchy based on function within the railway hierarchy and to reflect agricultural potential of the region. The I-plan and the T-plan varied in size from two to nine blocks with a median value of four blocks. Grand Trunk Pacific towns tended to be larger than those of its competitors for the same period.[15] The GTP standard plans were four to eight blocks on average but varied as high as thirty-six blocks.

The CPR towns also showed a hierarchy of size to plan. In northern Alberta the linear form tended to be used for towns of two to four blocks. The T-plan was used in central Alberta and by northern branch lines for a larger plat from four to eight blocks in size. Both the angular plan and the crossing plan were used in large plats of sixteen blocks in southern Alberta while in northern Alberta these plats were only eight blocks in size. Consistent numbers regarding size to plan are difficult to arrive at because size varied with time and with company. Spatially, northern plans tended to be smaller with a range of one to forty blocks, while southern plans had a range of two to seventy-nine blocks in the south.

Unusual Railway Plans

The inventory also examined the incorporation of park or public space into plans. Park, school,or reserve parcels were noted in 42% of all plans studied. Formal park land was designated in nineteen plans while school sites were noted in fifteen plans. Reserves (Department of Public Works or Park Reserves)[16] were laid out in a total of 181 plans. Only 35% of southern plans incorporated parkland while 46% of northern plans included the designation. Changes in planning legislation thus had a marginal effect on the urban design of the province after 1914.

Deviations from the typology were noted in part by the C-plan and also in tabulations on Reserve and park space. Variations in plans include the use of crescent subdivisions, semicircular design, radial or axial avenues, central squares and parkland. Generally, most were aberrations from the norm.

The unusual designs arose out of specific plans prepared for privately owned subdivision developments. The first subdivision containing crescents and a plat which followed topography was prepared in 1905 by A.E. Farncomb. This plan was a subdivision of exclusive lots in the Red Deer townsite on land owned by S.F.Gaetz.[17] Farncomb subsequently, in 1906, laid out a plan for the Sylvan Lake townsite which incorporated a circular plan composed of a central park surrounded by lots.[18] The Entwhistle townsite,

laid out in 1908 by J.L. Cote for the Grand Trunk Pacific used a semicircular shape for its form as it followed the curve of the railway right-of-way.[19] Radial avenues were platted in the Mirror townsite for the Grand Trunk Pacific in 1912 by J.E. Grey.[20] R. Knight prepared the Lakeview subdivision in the Wabamun townsite in 1912. It incorporated central parks with crescents which followed the topography.[21] The Marlboro townsite was platted by S. Knight in 1913 for the Edmonton Portland Cement Co. The plan followed the topography using a crescent plan and parks and also designates a commercial area in the layout.[22] The CPR also incorporated parks into its towns when requested by the community as at Coronation where park and school lands were identified in 1912.[23]

Analysis of Southern Alberta townsites failed to show a similar variety of plans. However research revealed an interesting plan response to the grassland region. Beginning in 1910, William Pearce developed a plan to incorporate the unused portion of the railway right-of-way for tree planting in the CPR's Eastern Irrigation Block. Pearce saw tree planting as a necessity in order to draw settlers to the irrigation block towns as well as introducing an element of civic beauty to the townsite. Tree planting was proposed along the station grounds, on the main street, and along the irrigation canal. Tree planting programs were dependent on access to water, and trees in

these towns were to be made "the chief attraction" in towns where land was not viewed as particularly valuable at the time.[24] The most notable "Parkland town"[25] was Brooks which functioned as the headquarters for the Eastern Irrigation District. Brooks reportedly had large station gardens and a central park, fish pools, and treed boulevards which were maintained by a staff of gardeners.[26] The CPR laid out similar parks at four other townsites: Standard, Wimbourne, Makepiece, and Hussar. Paralleling the idea of the "Parkland town" was the problem of the decreasing size of railway right-of-ways and the need for a purpose for the leftover land. Pearce prpposed in 1910 that "we could lay it out with trees and beautify the place, if nothing else...make it an ornamental parcel which would add very much to the attractiveness of the location".[27] Station parks became popular and competitions were held between stations for the best kept gardens within the division.[28]

Apparently the CPR hierarchy was also interested in contemporary ideas in urban design by 1910. Pearce was instructed to look into the planning of circles in the middle of streets and radial avenues which he incorporated in a draft plan of Cassils.[29] Current ideas appear to have had little impact on the majority of town plans as nothing appears to have come out of these design ideas.

Land Surveyors

Surveyors played a critical role in the translation of general instructions into a form on the ground. It is difficult to obtain information regarding many of the surveyors as many of them were highly mobile individuals in a profession which demanded mobility. Many individuals had a notable impact on form variations. For example, D.T. Townsend(CPR) and A.S. Weekes(CNoR) together surveyed 28% of the townsites in Alberta. Figure 12 lists the major land surveyors and the number of towns each surveyed according to form. Most land surveyors came to Alberta from Ontario and Quebec and by 1900 some were well-trained university graduates in engineering and science. Several of the surveyors appear to have been trained and interested in townsite plans which reflected the concerns of the town planning movement. Generally most of the surveyors continued to lay out designs which continued the tradition of utility.

Conclusion

A greater degree of variability exists in Alberta town plans than has been noted in the past. The railway companies did not plat the same layouts throughout their townsite development history. We have seen that plans varied spatially and over a period of time. Railway companies were not as inflexible in their town designs as they have been portrayed. It appears that when community interest and/or

FIGURE 12: Major Land Surveyors, Number of Alberta Towns Surveyed According to Form

SURVEYOR	YEAR*	EMPLOYER**	NUMBER OF FORMS USED							
			A	X	L*	T	I	C	G	L	M
A. DRISCOLL	1901-29	CONT	1	2	5	5	2	1	2	4	
A.E. FARCOMB	1905-13	CONT				2	1	3			
A.P. PATRICK	1900-27	CP/CONT	4		13	2			2	1	
A.S. WEEKES	1906-27	CNOR		4		9	51	1	1		
A. TAYLOR	1904-07	CPR				15					
A.W. McVITTIE	1902-10	CP/CONT	3	2	1	1			1		2
B.F. MITCHELL	1910-30	CONT			2	1	2		1		
C.B. ATKINS	1922-39	CONT			6	2	3		1	3	
D.T. TOWNSEND	1907-36	CPR	1	1	25	47	8				
E.C. BROWN	1912-40	CONT				4	4	1	1		
G.B. BEMISTER	1891-11	CONT	1	2		1	5			3	
J.E. GRAY	1912-31	CONT				5	3			2	
J.E. WOODS	1902-14	CPR	4						1	1	9
J.F. HAMILTON	1909-30	CPR	4		1	1	1				2
J.H. BURD	1916-31	CNOR				4	6				
J.L.COTE	1900-22	CONT	1				1	1	5	6	
J.L. DOUPE	1895-09	CP	2	2	3	1					
R.H. CAUTLEY	1920-36	CPR			1	1	2		1	1	
S.R. CRERAR	1908-09	GTP					6				
W. PEARCE	1906-11	CP		1	7		1				

*Year - years of surveying based on the number of registered plans

**Employer - railway company (CPR, CNoR, GTP) or by contract

owner specified design variations arose, they were incorporated into the plan. Townsites developed in conjunction with private owners showed a greater degree of innovation than the companies did alone. While the CPR was not innovative in its townsite designs, it was able to develop strategies to compensate for the aridity along much of its southern mainline route. Tree planting programs and park development in this region was an attempt to provide some relief to the treeless terrain.

Footnotes

1. R. Green and A.H. Laycock, "Mountains and Plains" in G.W. Hardy, Alberta: A Natural History, Edmonton, Hurtig, 1967, p. 77.
2. The only portion of the province not subjected to glaciation was the extreme south-eastern corner known as the Cypress Hills.
3. W.L. Strong and K.R. Leggat, Ecoregions of Alberta, Edmonton, Alberta Energy and Natural Resources, 1981, p. 1.
4. Strong and Leggat (1981), pp. 6-12.
5. Strong and Leggat (1981), p. 15.
6. Strong and Leggat (1981), pp. 27,30, and 35.
7. Strong and Leggat (1981), pp. 23,and 25.
8. J. Macoun and W. Butler were the most well known of these reporters.
9. The CPR was forced to haul water to Carlstadt, Tilley and Brooks ie. each station between Crowfoot and Suffield sidings.
10. Hudson studied approximately 200 town plats from the 1880-1920 period in North Dakota.
11. Hudson (1985), pp. 88,89.
12. Townsend went on to survey some 82 townsites for the CPR over a thirty year period.
13. The Grand Trunk Pacific employed S.R. Crerar for the majority of its townsites.
14. The Canadian Northern employed A.S. Weekes and J.H. Burd for its townsites.
15. GTP towns were larger than their competition for the same period, varying from 4,8,16, and 36 blocks respectively.
16. Public Works Act (1913).

17. A.E. Farncomb, Red Deer: Plan K-9, 1905.
18. A.E. Farncomb, Sylvan Lake: Plan XXXI, 1906.
19. J.L. Cote, Entwhistle: Plan 7471 V., 1908. The plan had a vague resemblance to Ebenezer Howard's design for his Garden City.
20. Mirror, 1912, GTP, Plan 7159 AI, J.E. Grey. Features: two radial boulevards, central core blocks with cutoff block corners.
21. Wabamun, 1913, Eakins, Gariepy and Lessard, Plan 3682 A.J., R.H. Knight. Features: parks, subdivision follows contours.
22. Marlboro, 1913, Edmonton Portland Cement Co., Plan 7433 A.N., R.H. Knight. Features: planned around large central park, residential subdivision with curved streets, commercial area lot differentiated in rectangular form, no rail access.
23. Parkland shown on registered plans was transferred to the Crown for the use of the public. Its maintenance was the responsibility of the community with the exception of lands on the CPR right-of-way.
24. The term Parkland town was coined by the author and parallels the concept used by the Australian government in its towns established in New South Wales.
25. Brooks History Club, Between the Red Deer and the Bow, Brooks, Alberta, 1975. Contains a chapter on the "elite of the CPR" located at Brooks, see pp. 137.
26. UAA, Pearce Papers, Pearce to Dennis, September 8, 1909.
27. UAA, Pearce Papers, Pearce to Dennis, November 4, 1909. Station parks were also incorporated into GTP station sites in order to enhance the appearance of the town.
28. Cassils, 1920, Plan 8709 C.H. D.T.Townsend. Three Blocks surveyed in railway linear, two blocks cancelled 1949.

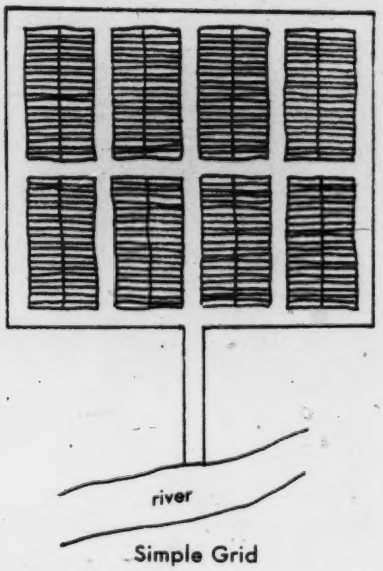
Chapter 5

Non-Railway Townsites in Alberta

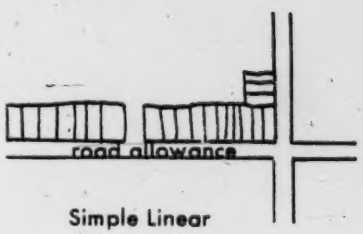
While it is true that the railway established the urban pattern in the Canadian West, urban development was not restricted exclusively to the railway line. Many examples have been noted, in local histories and in rural history monographs such as Voisey's on the Vulcan area, that hamlets and villages developed as market centres prior to the arrival of the railway. Such communities often developed around post offices, churches, schools and general stores. Many of these centres were not formally surveyed and thus no official record remains of their layout and size but such evidence is available for some. The focus of this chapter deals with those communities that were formally surveyed and sold as townsites with no rail connection. Approximately 20% of all towns in Alberta were laid out for individuals or companies independently of railway companies.[1] These townsites have been categorized into the simple grid (G), the simple linear (L), and the Mormon block (M) forms which are illustrated in Figure 13.

The Simple Grid

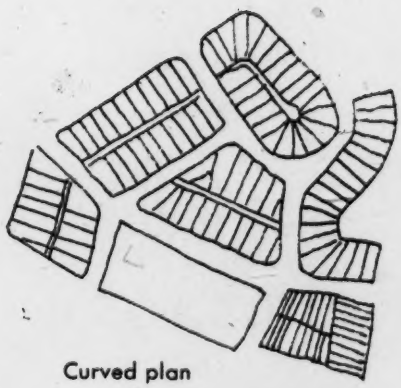
The simple grid, as noted earlier, was one of the most widely used forms of land subdivision in history. The form



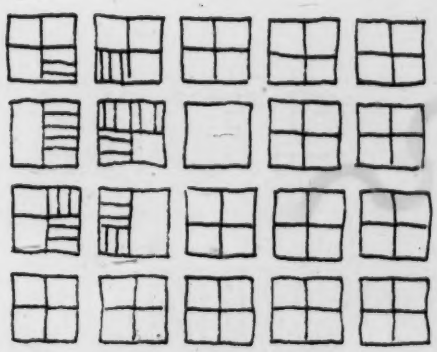
Simple Grid



Simple Linear



Curved plan



Mormon Block

Figure 13: Non-Railway Townsite Forms

was adopted by the Hudson's Bay Company for the subdivision of its Reserves in western Canada during the 1870s and 1880s. It was also employed by the federal government in the layout of its townsites during the 1880s. The simple grid thus had a long history of corporate use in Alberta prior to the major railway town building era.

The simple grid is characterized by its rectangular blocks, uniform street width (1 chain), and narrow lots (25x125 feet or 7.6x38.1 meters). Often plans did not incorporate public space but allotted space for industrial uses such as mills or ferry landings. The plans did not make any allowance for topography or natural features in the layout.[2] The simple grid thus represents an utilitarian approach to land subdivision.

There were two users of this form - private and corporate. The private users were individuals who owned the quarter section on which, or adjacent to that on which, the church, general store, post office or school was located. Other private users were those who speculated the railway would cross their land and require a townsite at some time in the future. The corporate users of this form included the Hudson's Bay Company, the Revillon Frérès Trading Company, the Roman Catholic Church and the federal government. The trading companies tended to lay out large speculative subdivisions surrounding their trading post sites, while the Catholic Church subdivisions were of a

modest size. The simple grid was also used by some coal companies in laying out townsites for their employees.

The use of the simple grid was determined by the owner to meet his requirements for rapid land division. The surveyor facilitated the use of the form rather than incorporating any creative design. The size of subdivision varied over time from 216 blocks at Ft. Macleod (1888) to 20 blocks at Peace River in 1914. The post-war period was characterized by smaller subdivisions averaging at eight blocks in size.

The simple grid was used extensively in isolated areas. In Southern Alberta, Ft. Macleod and Pincher Creek were established prior to the arrival of the railway through the region. Neither received rail connections until nearly ten years after their inception, and both functioned as successful centres despite their lack of railway access. Ft. Macleod functioned as an administrative centre for the North West Mounted Police and as an agricultural centre while Pincher Creek served the ranchlands surrounding it.

In Northern Alberta the simple grid marks the presence of the Hudson's Bay Company reserves from the 1880s on. With the decline of the active local fur trade, the trading companies shifted their emphasis and sought to profit from their strategically located land holdings. Dunvegan (Hudson's Bay Company) and Lesser Slave Lake (Revillon Frérès Trading Company) were examples of this. The Lesser

Slave Lake townsite was a forty block subdivision laid out by the Revillon Fréres in 1900 reflecting the optimism of the era.

The Catholic Church already had an extensive system of missions and parishes throughout central Alberta. Land was subdivided at these parishes according to demand by the local community. Frequently individuals, particularly the French Canadians and métis, developed townsites near the Church to serve the local community, such as at St. Paul. The form was used most frequently prior to 1914. No other religious group in Alberta had as many missions or were as successful in drawing settlers to their parishes as the Roman Catholic Church.[3]

Post World War I use of the simple grid occurred in foothills and northern areas where townsites were road dependent. Communities such as Black Diamond were laid out on a large grid plan and served a substantial ranching hinterland. The use of a large grid reflected the continued speculative nature of land development.

The Simple Linear

As in the case of the simple grid form, the simple linear form represents one of the most basic forms used in land subdivision. The linear form was used primarily along roadways and is one of the oldest forms of settlement. In Alberta the townsite was located at an intersection of roads

and thus followed the survey block. The form is illustrated in Figure 13. As in the case of the simple grid, the linear form had as its focus the post office, school, general store or church.

The linear form was usually small in size. It generally consisted of lots, often of irregular dimensions, which faced the roadway. Lots were initially located on one side of the road. The focal point of the plan was the intersection with another major road. The plan contained one to two blocks and up to thirty lots.

The most numerous examples of the simple linear form are located in Northern Alberta. The form was used extensively from 1920 on, and reflects the development of the highway system and the decline of railway branchline construction. Most of the post-World War I settlements were located along the northern fringe of the parkland region and into the boreal region. In Southern Alberta, the form was used in the foothills region. The form was favored in marginal areas because of its compact shape thus minimizing the problems created by topography or vegetation.

The use of the form does not appear to have been contingent on the surveyor. Although surveyors working in isolated areas used the form extensively, the form followed the road alignment. Nearly all were laid out for private owners to meet the needs of the community that developed around the focal point. As in the case of Bonnyville (1922)

or Calmar (1931), the subsequent arrival of the railway had little effect on the form of the community which maintained its orientation to the highway.

The Mormon Block

Research into plans registered at the Southern Alberta Land Titles Office revealed an urban form feature which was unique to Southern Alberta. The Mormon Block form illustrated in Figure 13 was the only form identified in this study which was solely related to a particular ethnic/religious group.

The Mormon Block takes its name from the square blocks which characterize the plan. The basis for this form is usually given as the "Plat of Zion" which prescribed the form and size of Mormon settlements.[4] The Plat stipulated that all people live within the city; that the area of the city be one square mile; that blocks of ten acres be subdivided into twenty half-acre lots; that streets be 132 feet (40.2 meters) wide, intersecting at right angles and aligned to the cardinal points of the compass. The Plat of Zion established the form for Latter Day Saints' (LDS) communities and though not all LDS plats followed the standard plan, basic elements such as square blocks and wider streets appear consistently.

In total the LDS established nineteen settlements in Alberta, of which ten plats were laid out using the Mormon

block.[5] The Mormon block contained square blocks (620x620 feet or 190x190 meters) which were subdivided into four residential lots or twelve commercial lots. Streets varied in width from 80(24.4), 100(30.5) or 132(40.2) feet (meters). Most plans also designated park and school blocks. Some clearly denoted commercial, residential and agricultural land uses in the community. Nearly all of the LDS plans had little consideration for topography as the Mormon block was imposed on the landscape.

Cardston was the first townsite laid out by the LDS in 1887. It was laid out with the prescribed square blocks, wide streets, and large lots. The plan appears to be a fairly strict interpretation of the Plat of Zion. In contrast Raymond, laid out in 1901 was a major departure from the Plat. The reasons for the plan modification are not clear. The design for Raymond was recommended by Apostle J.W. Taylor[6] who was reportedly influenced by the street pattern of the L'Etoile district of Paris. Two diagonal axes were superimposed on the Mormon block pattern. The lack of sufficient town growth subsequently meant that the major diagonals were closed by the town from 1925 to 1940. Little evidence remains today of Taylor's grand plan.

The Mormon block was an application of the American preference for square block subdivision used elsewhere in the United States.[7] The urban design conventions of the nineteenth century appeared to favor squared blocks rather

than rectangular ones. Hudson notes that standard blocks were 300 feet (91.4 meters) square with six residential lots or twelve commercial lots.[8]

The Alberta plan inventory also identified the square block form in the Crowsnest Pass communities of Frank, Blairmore and Coleman. These communities were surveyed by J.E. Woods on contract to the Canadian Coal Co. and International Coal and Coke Co. Not all of the Crowsnest Pass communities were surveyed in the square block form nor did Woods only survey in the square block form though he appeared to favor it. The rationale behind the form choice is not clear and virtually nothing is known of Woods.[9] The owners of the various coal companies in the Pass represented not only American but also British, French and Eastern Canadian interests, thus no clear connection exists to corporate directive. The topography of the Pass favors a more linear alignment of blocks which the rectangular block would have provided equally well. The use of the square block appears to have been an American influence possibly from the Mormon settlement in the region or perhaps Woods, having had American surveying experience, used a form with which he felt most comfortable.

Conclusion

The simple grid, simple linear and Mormon block form have been grouped together because of their lack of

dependence on the railway. Both the simple grid and simple linear forms were used in isolated areas. The simple grid reflected the mentality of an earlier era based on speculation. The simple linear plan was a reflection of the changing focus of settlement from railway to roads. Townsites were no longer only developed according to corporate guidelines. Instead private citizens chose locations and a form to meet the needs of the dispersed agricultural fringe. These meager townsites were never envisioned by their developers as potential 'metropoli of the north'. The Mormon block was a reflection of the church authorities attempting to maintain community cohesiveness. The presence of the square block in the Crowsnest Pass appears to be an anomaly in Alberta since no other known examples exist in Alberta.

Footnotes

1. Based on author's research.
2. Subdivisions fronting on navigable water were set back from the edge at a distance which enabled the subdivision to retain its square shape. Examples are Edmonton, and Dunvegan.
3. The Anglican and Methodist missions were not nearly as successful as the Roman Catholics Church in drawing group settlement to their missions nor were they as numerous.
4. Lehr (1971), p. 40.
5. The LDS established thirteen farm villages out of nineteen settlements in Alberta. They are: Cardston, Aetna, Mountain View, Beazer, Leavitt, Kimball, Magrath, Stirling, Orton, Raymond, Taber, Glenwood, and Hillspring. Little information exists on the remaining six.
6. Taylor was called to Alberta in 1890 to organize the Alberta Stake of Zion and was instrumental in LDS colonization efforts.

7. Reps (1980) provides many examples of square blocks or nearly square block townsite subdivisions throughout the central and northern regions of the United States. Unfortunately Reps makes no mention of the use of square blocks versus rectangular blocks as a design convention of the period.
8. Hudson (1985) notes the survey preference for square blocks in his study of North Dakota towns. Hudson, p. 87.
9. Woods received his DLS commission in 1885 at Aylmer, Quebec. Little else is known of his past.

Chapter 6

Conclusion

An era of town platting came to an end with the advent of the Second World War in 1939. Some 500 townsites had been laid out over a sixty-year period by corporations, individuals and governments. Approximately 75% of all townsites in Alberta were laid out by the railway companies. Some of the most imaginative plans were laid out by the railway and by private owners. The passing of the railway era actually began in the 1920s as the pioneer fringe moved farther north and settlement followed the road rather than the rail.

Certain hypothesis were set out in the Introduction regarding the structure and process of townsite development in Alberta. The first hypothesis stated that the urban form was a result of corporate and federal decisions advancing their goals regarding settlement. This hypothesis was true for the first thirty years of urban development but with the increased number of townsite plats the role of the individual also increased in importance. The second hypothesis was that the grid plan town represented a standardization of structure applied uniformly without consideration for site or situation. The typology of plans indicates that all towns in Alberta are not the same.

Variations in plan occur through time, over space, by company and by owner. Plan variations occurred primarily with respect to principal alignment to the railway and in the location of commercial areas. In the absence of standardized policy the major influence on plan was the land surveyor who had a major impact on form evolution. The third hypothesis dealt with the effect of contemporary planning trends on the prescribed town forms. Contemporary planning ideas did not have a substantial impact largely because of the scientific and utilitarian attitudes of the land surveyors involved. Provincial legislation in 1913 introduced the Public Reserve as plan element which meant that park space was incorporated into plans. The artistic park plans of Olmsted did not emerge as a result of the legislation.

Standardized approaches to land subdivision were the norm with the trading companies and governments. This approach was formalized in the Manual of Instructions provided to Dominion Land Surveyors. With the advent of the railway, initial town plats reflected the problems the surveyor faced regarding town alignment. As more plans were platted and as the numbers of surveyors increased so did the need for standard plans to facilitate a fast and coordinated land subdivision.

Form Variations-Time

The greatest variable influencing the form of Alberta towns was the time of townsite creation. Townsites laid out in the 1880s differed substantially in size and structure from those of the 1920s. The earliest plans were characterized by their large size with no structural differentiation on the basis of lot size, no functional differentiation and no modification due to topography. The early subdivisions reflected the prevalent contemporary attitude to land as a means of obtaining wealth through the sale of subdivisions. The larger the subdivision the greater the perceived return. The lack of lot differentiation between commercial and residential lots reflects the common attitude that it was up to the individual purchasers to determine the purpose of their lots and ultimately the structure of the plat. The early railway plats also contained uniform sized lots and no structural delineation.

As the number of railway townsites increased, the plans became more complex. This coincided with the rising awareness by surveyors of planning issues such as zoning, health and sanitary conditions. The plats of the 1920s were compact plans designed to meet the needs of the surrounding community for commercial establishments, schools, churches, and accompanying residential land. Their small size reflects the dispersed nature of the existing population and

the slow potential growth of the townsite. Many of the small plans reflect a greater degree of functional differentiation than did the massive section-sized subdivisions of the 1880s.

The CPR best illustrates the evolutionary changes which occurred in townsite form. The CPR townsites evolved from a discretionary format in the 1880s to a more structured, planned townsite form. With no clear policy of its own and with no formal townsite department to develop a policy, the company relied on the individual form preferences of its surveyors. Early plats thus illustrate different solutions to the problem of plat alignment, ie. at right angles to the railway or at right angles to the survey block. Railway crossings within townsites also provide another factor in determining form. Once railway policy regarding crossings became established, then plats were forced to locate on one side of the railway. Location of plats on one side coincided with the company's predilection toward two forms - the railway linear and the T-plan. With the preference of these two formats established, the company could then move toward a more formal departmental policy regarding form.

The remaining transcontinental railways, by virtue of their later date of entry, were part of a different process. Both of these companies had central organizations which coordinated townsite layouts and form to meet corporate policy. It would be logical for these companies to favor a

different form (I-plan) initially in order to clearly differentiate their townsites from the competition. The T-plan was used by all of the companies in this period because of its widespread association with the American railway townsite. The use of a common form was in response to the public perception that towns had to have a certain "look" in order to be marketable and to be successful. This perception of acceptable uniformity of design was noted as early as 1889 by Pearce regarding the Canmore townsite plan.

By 1908 townsite platting was no longer viewed as merely another form of simple land subdivision. The GTP took great pains to lay out its townsites on the basis of scientific methods. Research was conducted into the methods and the format used by several American companies. Surveyors were hired who had previous experience in townsite planning. Company surveyors were used beginning in 1906-1908 by both the Canadian Northern Railway and the CPR which would explain a greater uniformity of plans from this period on. This would help explain the variation in plan forms between different surveyors. Based on present research it is difficult to assess whether the company determined the initial use of these forms or whether they were the surveyor's preference. In the general absence of guidelines the companies complied with and later adopted the use of those plans. The exception was the GTP which chose the I-plan as their Standard Plan prior to the survey of its

townsites.

Form Variations - Spatial

Urban form also varied spatially in Alberta. A variance is noted in Figure 14 from south to north and to a lesser extent from east to west. This variation incorporates the spatial diffusion of homestead settlement which entered Alberta from the south-east corner, in the arid areas, and moved west while a second penetration entered at the eastern edge of the Parkland zone and followed this zone westward. The location of the railway in the south and southern coal development meant that initial development occurred in the south. However, the arid nature of the region did not lend itself to extensive agricultural development without irrigation. As a result, few townsites were laid out initially and those which were platted were in a linear form. Settlement along the south/north branch line between Calgary and Edmonton in the Parkland zone grew at a faster rate. This line shows the greatest variety of town form as different ideas were tried, applied or discarded. The advent of the transcontinental lines along the northern edge of the Parkland increased the rate of settlement and townsite activity. The advent of branch line activity by all companies in the areas between the railroads meant that the central area was serviced by a townsite boom and ultimately a glut of towns.

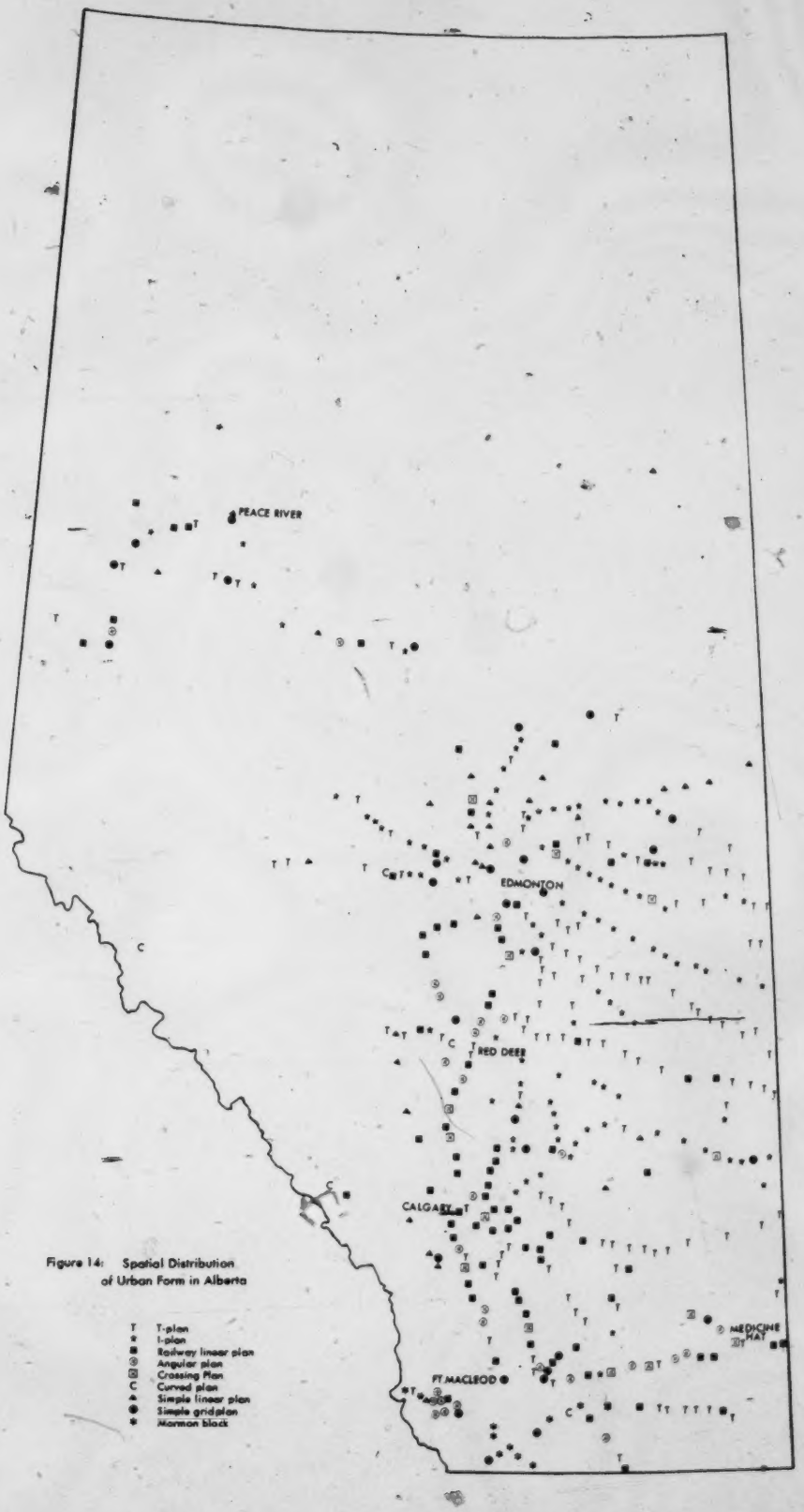


Figure 14: Spatial Distribution of Urban Form in Alberta

Environmental conditions appear to have had a marginal effect on plans. Townsite selection was based on a number of factors such as mileage, land ownership, and competition, with environmental factors of lesser consideration. Numerous examples exist of townsites laid out in heavy bush, in low or wet land, and on hillsides. Extensive criticism has been leveled at the railway companies for poor site selection. Undoubtedly economic factors took precedence over environmental ones but only one company appeared to be blatantly blind in its site selection. The Canadian Northern Railway literature is filled with complaints about its townsites; for example, at Vegreville and Big Valley. This situation appears to have been due to the way the Company's townsite development was handled by its affiliated land company (Davidson and McCrae) and their land agents.

The lack of water and the problem of tainted water had long been a problem in the grassland areas. Initial company reaction had been to haul water in and make it available to town residents as well as meet the needs of the railway. The arid areas in the south resulted in a response from the CPR to plant trees and develop station parks at its townsites. The concept of a "Parkland town" originated with Pearce of the Irrigation Department who was well read and had traveled extensively in the American irrigation areas. Pearce proposed the incorporation of tree-lined streets and parks at stations to ameliorate the arid appearance of the

region and to create a more favorable environment for the residents. Station parks were later adopted by the CPR and by the GTP as part of their station beautification programs.

The mountain region saw towns locate along valley bottoms in fairly wide valleys. Towns here tended to take a more linear shape though the form varied extensively. Original plans took little account of slope and placed subdivisions in tiers up the slope.

Northern areas were limited more by their isolation than by their environmental conditions. Early fur trade sites, when subdivided, were laid out in a simple grid. Later settlement followed the highway linear pattern. Settlement of the region remains concentrated at nodes based on resource activities.

Form Rationale

We have seen in this thesis that a greater degree of variability of townsite form exists in Alberta than is often appreciated. The first hypothesis questioned the source for the urban form; that the form choice originated with the corporate mentality. This hypothesis is true of the first plans laid out by the Hudson's Bay Company and by the federal government. These plans established a precedent for grid subdivisions containing no functional differentiation or ornamentation. The research has shown that to provide anything differing from the "norm" would be perceived as

unmarketable by the purchasers. This hypothesis is also true of the towns laid out by the competitive railways. Form type was consolidated into three basic preferences - the T-plan, the I-plan and the railway linear (L*) plan. The combination and use of these elements depended on the company and the geographic region the line crossed. These three forms fulfilled the requirements of the prospective purchasing public that a town plat had a 'proper' look to it. These same features were thrown back at the railway companies as 'boring' some ten years later. The companies required plans which could be surveyed easily and quickly and could easily be added on to without substantial resurvey work.

Non-railway townsites generally reflect the passing of the railway era. Located in isolated eras, these towns tended to be platted in response to the existing structure, ie. school, general store, etc. This category includes some of the earliest plans platted in Alberta prior to the railway, and some of the last plans of the era, all of which were located in relatively isolated areas, depending on the period. In the case of these communities, they followed standard locational theory which states that structure follows activity.

Planning Influences

Planning approach and planning tradition had a mixed

impact on townsite plats. The change in the Canmore townsite plan as noted earlier sealed the fate of innovative planning in Alberta until the larger planning movement gained widespread recognition and acceptance in Canada. The Raymond town plan (1901) was a radical departure from the norm and was laid out in response to the site owners' preference. A similar plan was presented for Cassils some ten years later but was never implemented. Both of these plans reflected current planning traditions but were also showy layouts in an attempt increase lot sales.

The companies were all influenced by the Reform movement in some way. Most advocated wide streets and large lots in order to create a healthful environment. The issue of civic beauty and park space within the townsite does not appear to have been a concern. Possibly company officials felt that being located in the countryside enabled town residents to commune with nature without a great deal of effort. The most progressive of the railways was the GTP which instituted informal zoning regulations and conducted its townsite layouts according to scientific principles. This attitude reflects the position of the company in the debate between scientific methods and qualitative beauty. Its right-of-way was designated for park and tree planting if industrial uses could not be found for the land. The use of land surveyors in townsite layout implies the predominance of scientific methodology over aesthetic

concerns.

Formalized planning efforts began with the passing of planning legislation in Alberta in 1913. Though this legislation had little impact on the physical layout of townsites, it drew public attention to the uniformity of layout and rampant land speculation. The effect of this legislation was the introduction of the Park Reserve/Department of Public Works Reserve categories of land use, which became required elements in subsequent subdivisions. Previously, little attention had been paid to public space in plans, thus this legislation sought to incorporate this as a land use. Nearly all plans from 1913 on include this element but usually locate the park space at the periphery of the town plan rather than incorporate it into any formal design format. That the basic plan forms continued in use without subsequent alteration reflects the perception of the owners and purchasers to what was considered as acceptable town form.

Comparative Development

Railway townsite development in Alberta has tended to parallel the American experience. The physical structure of a community was laid out prior to commercial activity. Trade was delegated to railway points and town viability was not considered in the question of site selection or layout. Similarly Alberta railway towns enjoyed an evolutionary development as plan forms changed through time.

The major difference in townsite layout in Alberta compared with the United States was the role of the central authority in determining form. The American townsites were developed by many individual promoters who were affiliated with the railway companies. Actual townsite form was determined by the railway company. In Alberta townsite development was carried out by the companies themselves or by private owners. Cultural perception of townsite form resulted in a uniformity of plans. Thus, in both Canada and the United States, public perception resulted in plan uniformity, while the mechanisms differed. The central authority role was initially strong and remained strong throughout railway development. Subsequent government involvement in Alberta legislated the incorporation of public space into the structure of the community. Similarly municipal authorities played a larger role in the subdivision approval process.

Another difference between Alberta and the United States is form related. The American surveyors preferred more squared blocks of land in subdivisons over rectangular blocks which characterize Alberta towns.

Townsites in both Alberta and the United States were laid out to prevent the competition from gaining access to their traffic, leading to gluts in townsite locations. Railway companies in Alberta were aware of the built-in obsolescence of later towns but chose to ignore the problem.

Numerous comments by company officials exist of labeling towns into categories such as - 'won't amount to much', 'has promise', etc.

Conclusion

The grid plan and its variations were the chosen base for land subdivision in Alberta. The precedent for using this form lies in the entire history of most frontier land subdivision in North America.[1] The grid was the embodiment of a mentality that subsequently perceived land as a commodity. Speculative land development was deemed appropriate and acceptable as a method of subdivision. Speculative grid subdivisions thus were a marriage of profit with economy and efficiency resulting in an utilitarian approach to land subdivision.

Townsite development in Canada has had a long history of central authority involvement. The colonial authority in British North America and subsequently in Upper Canada developed the layout and chose the sites for future townsites. With the development of the Canadian Northwest, central authority was maintained by the Hudson's Bay Company in the division of its Reserves, and by the federal government in the laying out of certain CPR townsites and in the subdivision of its land at Police posts. Both of these agencies retained the grid plan as their preferred means of subdivision. The railways initially incorporated these

forms into their townsite designs but quickly were forced to develop appropriate plans to fulfill settler's ideas regarding townsite layout balanced with economics. Railway plans thus changed over time and space. Forms evolved according to the knowledge and preference of the surveyor until appropriate designs were identified. These were then ratified either formally (by policy) or informally (by rehiring the surveyor) as the form choices of the company. Subsequent forms reflected a primitive hierarchy primarily by size of subdivision or by use of simpler forms.

As in the American case, railway companies located towns without regard for the towns' survival. This built-in obsolescence has resulted in an urban hierarchy today which is faced with trying to sustain communities which have a marginal future. Branchline competition meant that townsite location was based on the traffic potential of a region. As a result often the condition of the site or the potential of the region were not considered. A poor situation thus resulted in slow growth for the community.

The influence of the planning era does not appear to have been significant in terms of radical departures in form. Isolated examples exist of more elaborate designs but these remain as isolated attempts at the request of particular owner/developers. The major success of the planning movement was the institution of controls on speculative development and the inclusion of public space

into plans. Subsequent plans to the Second World War continued the tradition of economy and efficiency.

Research Recommendations

The importance of individual surveyors as a significant element in urban form was not expected. This project was organized from the perspective that central authority established and implemented the design criteria. In the case of Alberta, this does not appear to have been true in all cases. More research is thus required into the role and training of early land surveyors as agents of urban form.

Secondly, the role of certain individuals in determining form was not expected. A case in point is the tremendous impact of Pearce on urban design over a thirty-year period. To him goes the credit for the unornamented grid, the concept of the "Parkland town" and the implementation of a station beautification program. Additional research is required into identifying other individuals and their impact on urban design.

Though substantial research was conducted into railway company townsite dynamics, more is required regarding the CPR. Alberta represents the last frontier on the prairies but additional research into the development process, policy and form in both Saskatchewan, Manitoba and British Columbia is also required. Additional research is also required in these provinces on surveyors. A significant body of

literature exists on the town building process particularly on the success of Boosterism in determining a town's successful development relative to its neighbors. Little research has been conducted into the period of development, first versus last, as it influences a town's success nor has anyone focused on the aspect of built-in obsolescence. Little research has been conducted on the role of speculation and speculative development in the Canadian West yet this thesis has shown that speculation was one of the major elements of townsite layout and development.

Footnotes

1. The major significant departures from this practice are in areas of early settlement where metes and bounds surveys occurred, and in areas where French and Spanish ethnic settlement prevails.

Bibliography

Manuscript Collections

Alberta Land Surveyors Association - Edmonton, Alberta
List of Dominion Land Surveyors commissioned after examination before the Board, 1875-1964.
Ontario Land Surveyors, Index of Biographical Sketches, 1934, 1949.
Canadian Surveyor, 1927, 1928.

Canadian Pacific Corporate Archives - Montreal, Quebec
Van Horne Letterbooks, 1882-1888, 1912-1914.

Glenbow - Calgary, Alberta
Canada North West Land Co., Correspondence, 1883-1908, BN.C212 Box 1 File 2.
Canadian Pacific Railway, Naismith Correspondence 1912, 1913. Advisory Committee Papers, 1913. Branch line Correspondence. Dennis Correspondence, 1904. BN.C212 G.

Provincial Museum and Archives of Alberta - Edmonton, Alberta
Department of Interior, Dominion Land Surveyors Correspondence, 1879-1931, 85.34/194.
Department of Municipal Affairs, New Plans files, 1924-1937, 65.74.
Public Utilities Board, 65.74, Files 407-663.
Ordinances of the North West Territories, 1888-1891.
Statutes of Alberta, 1911, 1912, 1913.

Public Archives of Canada - RG 30 - Ottawa, Ontario
Grand Trunk Pacific Correspondence, 1907-1915, #11617, 11618.
Terminal Cities of Canada, Ltd. Correspondence, 1913-1914, #2980.
Davidson and McCrae Ltd. Correspondence, #2980.
Mackenzie and Mann Ltd. Correspondence, #2980.

University of Alberta Archives - Edmonton, Alberta
William Pearce Papers, Surveys, 9/2/6/2
William Pearce Papers, Canmore Townsite, 1889-1891, 961.2.
William Pearce Papers, Settlement, 9/2/5
William Pearce Papers, Canadian Pacific Railway Administration, 1908-1910, 74-169.

Books

Adams, T. Rural Planning and Development, Ottawa, Commission of Conservation, 1917.

Bailey, B.R. Main Street Northeast Oregon: the founding and development of small towns, Portland, Oregon University Press, 1982.

Bettison, D.G., Kenward, J.K. and Taylor, L. Urban Affairs in Alberta, Edmonton, University of Alberta Press, 1975.

Bloomfield E. and Bloomfield G. Urban Growth and Local Services, Department of Geography, Guelph University, Occasional Paper#3, 1983.

Blue, J. Alberta Past and Present, Volume 1, Chicago, Pioneer Historical Publishing Co., 1924.

Bowsfield, H. ed. The Letters of Charles John Brydges, 1879-1882, Winnipeg, Hudson's Bay Record Society, 1977.

Bowsfield, H. ed. The Letters of Charles John Brydges, 1883-1889, Winnipeg, Hudson's Bay Record Society, 1981.

Brooks History Club, Between the Red Deer and the Bow, Brooks Museum and History Society, 1975.

Butler, W.F. The Great Lone Land, London, Sampson Low, Marston, Low and Searle, 1872.

Callow, A.B. ed. American Urban History, London, Oxford University Press, 1969.

Cannadine, D. and Reeds, D. ed. Exploring the Urban Past, Cambridge, Cambridge University Press, 1982.

Carter, H. An Introduction to Urban Historical Geography, London, Edward Arnold, 1983.

Crowsnest Pass Historical Society. Crowsnest and Its People, Coleman, Alta., 1979.

Dawson, C.A. and E.R. Younge, Pioneering in the Prairie Provinces: Social Side of the Settlement Process, Vol. VIII, Canadian Frontiers of Settlement Series, Toronto, Macmillan, 1940.

Elazar, W. Cities of the Prairie, New York, Basic Books, Inc., 1970.

Fleming, S. Report in Surveys and Preliminary Operations on the Canadian Pacific Railway, Ottawa, MacLean, Roger & Co., 1877.

Fries, S.D. The Urban Idea in Colonial America, Philadelphia, Temple University Press, 1977.

Friesen, G. The Canadian Prairies, Toronto, University of Toronto Press, 1984.

Goist, P.D. From Main Street to State Street, New York, National University Publications, Kennikat Press, 1977.

Harris, R.C. and Warkentin, J. Canada Before Confederation: A Study in Historical Geography, New York, Oxford University Press, 1974.

Hart, J.F. The Look of the Land, New York, Prentice-Hall Inc., 1975.

Hedges, J. Building the Canadian West: The Land and Colonization Policies of the Canadian Pacific Railway, New York, The MacMillan Co., 1939.

Hodge, G. Planning Canadian Communities, Toronto, Methuen, 1986.

Hodge, G. and Quadeer M. Towns and Villages in Canada, Toronto, Butterworths, 1984.

Hudson, J. Plains Country Towns, Minneapolis, University of Minnesota Press, 1985.

Jackson, J.N. The Canadian City, Toronto, McGraw Hill, 1979.

Katz, M.B. The People of Hamilton, Canada West: Family and Class in a mid-Nineteenth Century City, Cambridge, Mass., Harvard University Press, 1975.

Katz, M.B.; Doucet, M.J. and Stern, M., The Social Organization of Early Industrial Capitalism, Cambridge, Mass., Harvard University Press, 1985.

Lynch, K. Good City Form, Cambridge, Mass., The M.I.T. Press, 1985.

Macoun, J. Manitoba and the Great North-west, Guelph, World Publishing Co., 1882.

MacGregor, J. Vision of an Ordered Land, Saskatoon, Western Producer Prairie Books, 1981.

Martin, C. The Dominion Lands Policy, Toronto, Macmillan, 1938.

Mitchell, E.B. In Western Canada Before the War, 1915, Saskatoon, Western Producer Prairie Books, 1981 reprint.

Regehr, T.D., The Canadian Northern Railway, Toronto, Macmillan, 1974.

Reps, J. Cities of the American West, Princeton, N.J., Princeton University Press, 1979.

Reps, J. The Making of Urban America, Princeton, N.J., Princeton University Press, 1965.

Robertson, H. Grassroots, Toronto, James Lewis and Samuel, 1973.

Roebuck, J. The Shaping of Urban Society, New York, Charles Scribner's Sons, 1974.

Scargill, D.I. The Form of Cities, New York, St. Martin's Press, 1979.

Secretan, J.H. Canada's Great Highway, London, The Bowring Press, 1924.

Smailes, A. The Geography of Towns, London, Oxford University Press, 1957.

Smith, W.R. Aspects of Growth in a Regional Urban System: Southern Ontario 1851-1921, York University, Geographical Monograph No. 12, 1982.

Spelt, J. Urban Development in South Central Ontario, Toronto, McClelland & Stewart, Carleton Library Series #57, 1972.

Stilgoe, J. Metropolitan Corridor, New Haven, Yale University Press, 1983.

Still, B. Urban America: A History With Documents, Boston, Little, Brown & Co. Boston, 1974.

Sutcliffe, A. Towards the Planned City, Oxford, Basil Blackwell, 1981.

Talbot, F.A. The Making of a Great Canadian Railway, New York, Arno Press, 1981, reprint of original.

Taylor, G. Urban Geography, London, Methuen & Co. Ltd., 1940.

Thompson, D.W. Men and Meridians: A History of Surveying and Mapping in Canada, Vol. 1 and 2, Ottawa, Queen's Printer, 1966.

Vance, J.E., Jr. The Role and Structure of the City in the Geography of Western Civilization, New York, Harper and Row, 1977.

Voisey, P. Vulcan: The Economic and Social Development of New Farming Communities in Southern Alberta 1904-1935, in press.

Warkentin, J. The Western Interior of Canada, Toronto, McClelland & Stewart, Carleton Library Series No. 15, 1964.

Theses

Hicher, J.R. Events Leading to the Settlement of the Communities of Cardston, Magrath, Stirling and Raymond, MSC Utah State University, 1968.

Lehr, J.C. Mormon Settlements in Southern Alberta, M.A. University of Alberta, 1971.

Tagg, M.S. A History of the Church of the Jesus Christ of Latter Day Saints in Canada 1830-1963 Ph.D. Brigham Young University, 1963.

Whetten, N.L. The Social and Economic Structure of the Trade Centers in the Canadian Prairie Provinces, Ph.D. Harvard, 1932.

Articles

Adamson, A." Form and the Canadian City," Queens Quarterly 69, 1962, pp.49-68.

Artibise, A. "Exploring the North-American West: A Comparative Urban Perspective," American Review of Canadian Studies XIV, 1984, pp.20-37.

Artibise, A." Boosterism and the Development of Prairie Cities, 1871 - 1913" in A. Artibise and G.Stelter ed., Town and City, Regina, Canadian Plains Research Centre, 1981, pp. 209-235.

Artibise, A. "The Urban West: The Evolution of Prairie Towns and Cities to 1930," Prairie Forum 4, 1979, pp. 237-262.

Barton, B. "The Creation of Centrality," Annals of the Association of American Geographers (AAAG)68, 1973, pp.34-44.

Blumenfeld, H. "Form and Function in Urban Communities," in P.D. Spreiregen, ed. The Modern Metropolis, Cambridge, Mass., M.I.T. Press, 1967.

Bunce, M. " The Shaping of Rural Canada" in M.F. Bunce and M.J. Troughton ed. The Pressures of Change in Rural Canada, Geographical Monograph, York University No. 14, 1984, pp.1-10.

Careless, J.M.S. "Aspects of Urban Life in the West, 1870-1914" in G. Stelter and A. Artibise, ed. The Canadian City: Essays in Urban and Social History, Ottawa, Carleton University Press, 1984, pp. 125-158.

Careless, J.M.S. " Metropolis and Region: The Interplay between City and Region in Canadian History Before 1914," Urban History Review 3, 1978, pp.99-117.

Casement, B. "The Development of the Alberta Horticulture Research Station," unpublished manuscript, Glenbow #M5981, 1978.

Cautley, R.W. "Government Control of Townsite Subdivision," Annual Report, 1914, Alberta Land Surveyors Association, Edmonton, Alberta, pp.11-15.

Cherry, G. "The town planning movement and the late Victorian City," Transactions - Institute of British Geographers 4, 1979, pp.306-319.

Davies, W.K.D. "The Morphology of Central Places: A Case Study." AAAG 58, 1968, pp. 91-110.

Foran, M. "The CPR and the Urban West 1881-1930" in H. Dempsey ed. The CPR West, Vancouver, Douglas and McIntyre, 1984, pp. 89-105.

Foran, M. "Early Calgary 1875-1895: The Controversies Surrounding the Townsite Location and the Direction of Town Expansion" in A.R. McCormack & I. Macpherson ed. Cities in the West, Ottawa, National Museums of Canada, 1975, pp. 26-45.

Galbraith, J.S. "Land Policies of The Hudson's Bay Company, 1870-1913" Canadian Historical Review XXX11, 1951, pp.1-21.

Gentilcore, R.L. and D. Wood, "A Military Colony in the Wilderness: The Upper Canada Frontier" in J.D Wood ed. Perspectives on Landscape and Settlement in Nineteenth Century Ontario, Toronto, McClelland and Stewart Ltd., 1975, pp.32-50.

Gilpin, J.F. "The Land Development Process in Edmonton, Alberta, 1911-1917" in G. Stelter and A. Artibise ed., Power and Place: Canadian Urban Development in the North American Context, Vancouver, University of British Columbia Press, 1986, pp.151-172.

Gilpin, J.F. "Urban Land Speculation in the Development of Strathcona (South Edmonton), 1891-1912" in J.E. Foster, The Developing West, Edmonton, University of Alberta Press, 1983, pp.181-199.

Gilpin, J.F."Patterns of Land Development in Edmonton, Alberta 1881-1917," paper Canadian-American Urban Development Conference, University of Guelph, August 25, 1982.

Goheen, P.G. "Some Aspects of Canadian Urbanization from 1850 to 1924" in W. Borah, J. Hardoy, G.A. Stelter in Urbanization in the Americas, Ottawa, National Museum of Man, 1980. pp. 77-84.

Grant, H.R. "The Standardized Railroad Station on the Great Plains, 1870-1920" in B.W. Blouet and F.C. Luebke ed. The Great Plains Environment and Culture, Lincoln, University of Nebraska Press, 1979, pp. 119-137.

Gunton, T. "Origins of Canadian Urban Planning." City Magazine, Vol. 2, No. 3, 1982, pp. 27-36.

Hammer, K. "Territorial Towns and the Railroads," North Dakota History 36, 1969, pp. 358-365.

Hudson, J. "Towns of the Western Railroads," Great Plains Quarterly 2, 1982, pp. 42-54.

Hudson, J. " The Plains Country Town" in B.W. Blouet and F.C. Luebke ed. The Great Plains Environment and Culture, Lincoln, University of Nebraska Press, 1979.

Hudson, J. " Migration to an American Frontier," AAAG 66, 1976, pp.242-265.

Johnston, R.J. "Regarding Urban Origins, Urbanization and Urban Patterns," Geography 62, 1977, pp. 1-7.

Kirby, R.S. "Nineteenth Century Patterns of Railroad Development on the Great Plains," Great Plains Quarterly 3, 1983, pp. 157-169.

Knight, O. " Toward an Understanding of the Western Town," Western Historical Quarterly 4, 1973, pp. 27-42.

Krueckeberg, D.A. "The Culture of Planning" in D.A. Krueckeberg ed. Introduction to Planning History in the United States, Center for Urban Policy Research, Rutgers University, New Brunswick, New Jersey, 1983, pp. 1-12.

Latornell, A.J. "Subdivision of Land in its Relation to the Future of a City," Annual Report, 1912, Alberta Land Surveyors Association, Edmonton, Alberta, pp. 11-15.

Laycock, A.H. "Diversity of Landscape" in P.J. Smith ed., The Prairie Provinces, Toronto, University of Toronto Press, 1972, pp.1-32.

Laycock, A.H.and Green, R. "Mountains and Plains" in G.W. Hardy ed., Alberta: A Natural History, Edmonton, Hurtig, 1967, p. 68-89.

Lemon, J. "Study of the Urban Past: Approaches by Geographers," Canadian Historical Association: History Papers, 1977, pp. 179-190.

Matheson, M.H. "Townsites and Urban Land Use in Southwestern Saskatchewan," Canadian Geographer 11, 1958, pp. 9-16.

McCann, L.D. "Urban Growth in Western Canada 1881-1961," The Albertan Geographer 5, 1969, pp. 65-74.

McCormick, P.L. "Transportation and Settlement: Problems in the Expansion of the Frontier of Saskatchewan and Assiniboia in 1904," Prairie Forum 5, 1980, pp. 1-18.

Mercer, J. "On Continentalism, Distinctiveness, and Comparative Urban Geography: Canadian and American Cities," Canadian Geographer 23, 1979, pp. 119-139.

Morton, W.L. "The Significance of Site in the Settlement of the American and Canadian Wests," Agricultural History 25, 1951, pp. 97-109.

den Otter, A.A. "Lethbridge: Outpost of a Commercial Empire, 1885-1906" in A. Artibise and G. Stelter ed. Town and City, Regina, Canadian Plains Research Centre, 1981, pp. 177-202.

Pressman, N.E.P. "The Built Environment: A Planning Approach to the Study of Past Urban Settlement," Urban History Review 2, 1973, pp. 8-12.

Price, E. "The Central Courthouse Square in the American County Seat," The Geographical Review 58, 1968, pp. 29-60.

Rees, R. "The Small Towns of Saskatchewan," Landscape 18, 1969, pp. 29-33.

Rutherford, P. "Tomorrow's Metropolis: The Urban Reform Movement in Canada, 1880-1920" in G. Stelter and A. Artibise, The Canadian City: Essays in Urban History, Toronto, McClelland Stewart, 1977.

Schott, C. translated by A.F. Burghardt, "The Survey Methods," Canadian Geographer 25, 1981, pp.77-93.

Selwood, H.J. and E. Baril. "The Hudson's Bay Company and Prairie Town Development, 1870-1888" in A. Artibise and G. Stelter ed. Town and City, Regina, Canadian Plains Research Centre, 1981, pp. 61-94.

Sharpe, C.A. "The Teaching of Urban Morphogenesis." The Canadian Geographer 30, 1986, pp. 53-79.

Smith, P.J. "The Principle of Utility and Origins of Planning Legislation in Alberta, 1912-1975" in A. Artibise and G. Stelter ed., The Useable Urban Past, Toronto, Macmillan, Carleton University Institute of Canadian Studies, No. 119, 1979, pp. 196-226.

Smith, P.J. "John Arthur Roebuck: A Canadian Influence on the Development of Planning Thought in the Early Nineteenth Century," Plan Canada 19, 1979, pp. 200-210.

Stanislowski, D. "The Origin and Spread of the Grid-Pattern Town," The Geographical Review 36, 1946, pp. 105-120.

Stelter, G.A. "The Classical Ideal: Cultural and Urban Form in Eighteenth Century Britain and America," Journal of Urban History 10, 1984, pp. 351-382.

Stelter, G.A. "The Political Economy of Early Canadian Urban Development" in G. Stelter & A. Artibise, ed. The Canadian City, Ottawa, Carleton University Press, 1984, pp. 1-29.

Stelter, G.A. "The City Building Process in Canada" in G. Stelter and A. Artibise ed., Shaping the Urban Landscape. Ottawa, Carleton University Press, 1982, pp. 1-29.

Stelter, G. A. "Urban Planning and Development in Upper Canada" in W. Borah, J. Hardoy, G.A. Stelter ed., Urbanization in the Americas, Ottawa, National Museum of Man, Ottawa, 1980, pp. 143-155.

Stelter, G.A. "Introduction" in G. Stelter and A.Artibise ed., The Canadian City, Toronto, McClelland and

Stewart, 1977, pp.6-61.

Stelter, G.A. "The Urban Frontier in Canadian History" in A.R. McCormack and I. Macpherson ed., Cities in the West, Ottawa, National Museums of Canada, Ottawa, 1975, pp. 270-286.

Thomas, D. "Townsite Promotion Policies of the Canadian Pacific Railway," Unpublished paper, CPR Archives, March 15, 1977.

Voisey, P. "The Urbanization of the Canadian Prairies, 1871-1916," Social History 8, 1975, pp. 77-101.

Whitehead, J.W.R. "The basis for an historico-geographical theory of urban form," Transactions - Institute of British Geographers 2, 1977, pp. 400-416.

Williams, M. "The Parkland Towns of Australia and New Zealand," Geographical Review 56, 1966, pp.67-89.

Wonders, W.C. "The Influence of the Surveyor on Rural Settlement Patterns in Canada," Terravue, No. 1, Autumn, 1982, pp. 15-26.

Wood, J.D. "Grand Design on the Fringes of Empire: New Towns for British North American," Canadian Geographer 26, 1982, pp. 243-255.

APPENDICES

Appendix 1

Northern Alberta:
Inventory of Town Plans in Alberta

LOCATION	BLK	PLAN NO.	YEAR	SURV EYOR	TRAIN CO.	OWNER	FORM TYPE
ALCOMDALE	5	866 CG	1919	BFM	EDBC	EDBC	T
ALHAMBRA	1	1940 EO	1929	TDG	CPR	LAND	T
ALIX	15	3304 AC	1910	AEF	GTP	PRIVATE	T
ALIX	7	XXX	1904	AT	CE	CPR	T
ALLIANCE	9	304 BZ	1916	ASW	CNWR	CLIC	I
AMISK	4	1601 AA	1907	ERB	CPR	CPR	T
ANDREW	3	1344 EO	1928	DTT	CPR	CPR	T
ARMENA	2	3375 CC	1919	ASW	CNOR	CNTP	I
ASMONT	4	1379 CL	1922	RHC	CNR	CNRL	I
ATHABASCA L.	2	V	1898	GAB	NO	HBC	G
BARRHEAD	3	5440CL	1927	HER	PVR	GOV/A	L
BASHAW	8	2627 AC	1910	BFM	GTP	PRIVATE	F
BAWLF	8	LVII	1906	AT	CE	CPR	T
BEAUMONT	0	1912 EO	1929	GP	NO	PRIVATE	G
BEAUVALLON	4	1977 EO	1930	DTT	CPR	CPR	I
BEAVERLODGE	5	729 EO	1928	WGM	EDBC	EDBC	F
BELLIS	4	1039 CL	1921	JHB	CNR	CNRL	I
BELLOY	1	2967 ET	1939	WGM	NAR	PRIVATE	L
BENALTO	4	5237 AY	1914	DTT	CPR	CPR	T
BENTLEY	6	5319 CG	1920	OI	LNWR	PRIVATE	A
BENTLEY	8	XXXII	1905	JAC	NO	PRIVATE	G
BERWYN	2	1090 CL	1921	AD	CCR	CCR	T
BIG VALLEY	2	4035 AF	1911	GBB	CNOR	MMC	I
BITTERN L.	2	XIX	1903	RCL	NO	PRIVATE	G
BITTERN L.	8	XL	1905	AT	CE	CPR	T
BLACKFALDS	8	XVII-A	1902	RCL	CE	PRIVATE	A
BLACKFALDS	2	XVI	1902	APP	CE	PRIVATE	T
BLACKFOOT	3	7492 BE	1915	ASW	CNOR	CNTP	T
BLUERIDGE	2	5324 CL	1927	JEG	CNR	CLIC	T
BLUESKY	2	599 EO	1928	CBA	CCR	CCR	T
BLUFFTON	2	5413 CL	1927	TWB	LNW	PRIVATE	A
BODO	3	4975 EO	1931	JHB	CNR	CNARL	T
BON ACCORD	12	5261 BA	1914	CCF	AGW	AGW	A
BONNYVILLE	6	1189 CL	1922	MWH	NO	PRIVATE	L
BOTHA	4	3306 AP	1913	DTT	CE	CPR	L•
BOYLE	4	6626 BF	1915	CCF	AGW	AGW	L•
BRETON	3	4716 CL	1926	AD	LNWR	LNWR	L•
BROWNVALE	30	5826 CL	1927	BFM	CCR	CCR	L•
BRUCE	10	3626 AB	1910	TWB	GTP	GTPDC	I
BRUDERHEIM	4	3753 P	1906	ASW	CNOR	MMC/PRI	I
BUSBY	4	7761 AZ	1914	HPK	NO	PRIVATE	L
BYEMOOR	2	4684 CL	1926	JHB	CNR	CNARL	I
CADOGAN	6	1685 U	1908	ERB	CPR	CPR	T
CALMAR	4	4250 EO	1931	CBA	NO	PRIVATE	L
CAMROSE	8	XXVIII	1904	AT	CPR	CPR/PRI	T
CAMROSE	6	XXVIIIA	1905	HMM	CPR	PRIVATE	T
CAROLINE	4	3067 ET	1939	CBA	NO	PRIVATE	L
CASTOR	12	3780 AA	1910	AEF	CE	CPR	F
CHAUVIN	4	4835 W	1909	SRC	GTP	GTPTD	I
CHERHILL	2	1774 BW	1918	ASW	CNOR	CLIC	I
CHIPMAN	6	5250 Q	1907	ASW	CNOR	MMC	I
CLAIRMONT	16	1927 BQ	1916	WGM	EDBC	PRIVATE	A
CLANDONALD	3	5433 CL	1927	DTT	CPR	CPR	T
CLIVE	8	XLVIII	1905	JAC	CE	PRIVATE	A
CLYDE	16	4963 AF	1911	HPK	CNOR	PRIVATE	L
CLYDE	4	1453 AJ	1912	ASW	CNOR	MMC	I
COLINTON	2	1130BN	1916	ASW	CNOR	MMC	I
CONDOR	5	2960 EO	1930	CHS	ACR	PRIVATE	L
CONSORT	8	387 AJ	1912	DTT	CPR	CPR	L•
CORONATION	41	6046 AS	1912	SRC	CPR	PRIVATE	F
CZAR	2	3583 AC	1910	ERB	CPR	CPR	T
DAPP	2	868 CL	1922	AD	NO	PRIVATE	L
DAYSLAND	12	LV	1906	AT	CE	CPR	T
DELBURNE	1	6370 AK	1912	AEF	GTP	PRIVATE	I
DERWENT	3	420 EO	1928	DTT	CPR	CPR	T
DEWBERRY	4	5429 CL	1927	DTT	CPR	CPR	T

DODDS	3	6270 AW	1913	ASW	CNOR	MMC	T
DONALDA	8	5965 AE	1911	HM	AMR	MMC	T
DONNELLY	10	204 CL	1921	JTC	EDBC	PRIVATE	F
DUHAMEL	8	7309 AD	1911	ACT	GTP	PRIVATE	F
DUNVEGAN	9	5818 BD	1915	CLC	NO	HBC	G
DUVERNAY	11	5 BA	1914	WMC	NO	PRIVATE	G
ECKVILLE	5	6117 AQ	1913	HPK	CNOR	MMC	I
EDBERG	2	3998 AC	1910	ASW	CNOR	MMC	T
EDGERTON	8	5681 AC	1911	TWB	GTP	GTPDC	I
EDSON	40	1494 AC	1910	TWB	GTP	GTPDC	F
EGREMONT	2	1750 CL	1922	AD	AGW	PRIVATE	T
ELKPOINT	4	5389 CL	1927	ECB	CNR	CNARL	T
ELNORA	6	1862 AR	1913	JLC	GTP	GTPDC	I
ENTWHISTLE	20	7471 V	1908	JLC	GTP	PRIVATE	C
ENTWHISTLE	20	6543 X	1909	AD	GTP	PRIVATE	C
ERSKINE	9	LXX	1906	AT	CE	CPR	T
EVANSBURG	3	482 CH	1920	RHC	CNOR	COAL CO	L*
FABYAN	2	1556 CL	1922	BFM	CNR	PRIVATE	I
FAIRVIEW	11	572 EO	1928	CBA	CCR	CCR	I
FALHER	4	5556 CC	1919	BFM	EDBC	PRIVATE	G
FALHER	4	1748 CL	1922	JLC	EDBC	PRIVATE	A
FALLIS	8	4434 AO	1913	JEG	GTP	GTPDC	I
FAUST	4	4767 CL	1926	AD	EDBC	EDBC/PRI	A
FAWCETT	1	632 EO	1928	CBA	EDBC	PRIVATE	L*
FERINTOSH	16	1891 AB	1910	ACT	GTP	PRIVATE	T
FLEET	4	933 AJ	1912	DTT	CE	CPR	T
FORESTBURG	4	3012 BO	1916	ASW	CNOR	MMC	I
FT. ASSINIBOI	2	1806 ET	1936	RMH	NO	UA/PRIVAT	L
FT. SASKATCHE	24	4300 R	1907	GJL*	CNOR	--	G
FT.MCMURRAY	34	616 AO	1912	JLC	NO	LAND CO	L
GADSBY	8	153 Z	1909	DTT	CE	CPR	T
GAINFORD	7	698 AZ	1914	WMC	GTP	PRIVATE	T
GALAHAD	4	3010 BO	1916	ASW	CNOR	MMC	I
GIBBONS	2	868 CG	1920	ASW	CNOR	CNTP	I
GIROUXVILLE	1	5090 EO	1932	CBA	EDBC	PRIVATE	F
GLENDON	1	340 EO	1928	MWH	CNR	PRIVATE	L
GLENDON	1	1131 EO	1929	JEG	CNR	CNARL	L*
GLENEVIS	2	1392 BT	1917	ASW	CNOR	CNTP	I
GRAND CENTRE	1	2425 ET	1937	CBA	NO	PRIVATE	L
GRANDE PRAIRI	16	1410 AC	1910	JHS	NO	PRIVATE	G
GREENCOURT	2	661 CL	1921	ASW	CNR	CNTP	I
GRIMSHAW	5	1457 CL	1922	AD	CCR	CCR	T
GUNN	0	4045 CL	1925	JEG	CNOR	CNTP	L*
GWYNNE	4	3907 U	1908	AD	CPR	PRIVATE	I
HAIRY HILL	4	712 EO	1928	DTT	CPR	CPR	I
HALKIRK	7	1989 Z	1909	DTT	CE	CPR	T
HARDISTY	8	945 R	1907	AT	CE	CPR	T
HAY LAKES	4	805 BI	1915	RVH	CNOR	CNTP	I
HEINSBURG	3	4950 EO	1931	JEG	CNR	CNAR	T
HEISLER	4	1810 BQ	1916	ASW	CNOR	MMC	I
HIGH PRAIRIE	5	2998 BF	1915	DFM	EDBC	EDBC	I
HILLIARD	4	425 R	1907	ASW	CNOR	MMC	I
HINES CREEK	4	2727 ET	1938	CBA	NAR	NAR	L*
HOLDEN	16	3940 W	1909	SRC	GTP	GTPDC	I
HUGHENDEN	2	655 Z	1909	ERB	CPR	CPR	T
HYTHE	8	682 EO	1928	WGM	EDBC	EDBC	F
INNISFAIL	14	L	1892	GBB	CE	NM	A
INNISFREE	11	4175 R	1907	ASW	CNOR	MMC	X
IRMA	8	1560 W	1908	SRC	GTP	CPR	I
ISLAY	2	LXXXIX	1906	ASW	CNOR	MMC	I
JARROW	8	5621 AC	1912	ECB	GTP	GTP	I
JASPER	12	4011 BQ	1917	HM*	GTP	GOV	C
JOFFRE	2	5823 BK	1916	ASW	CNOR	CNTP	I
JOUSSARD	2	294 ET	1933	CBA	NO	PRIVATE	L
KAPASIWIN	30	4722 AQ	1913	JKM	GTP	GOV	G
KAVANAUGH	1	5983 CL	1927	AD	CE	PRIVATE	L*
KILLAM	8	XCVII	1906	AT	CE	CPR	T
KINGMAN	8	7534 AA	1910	AD	GTP	PRIVATE	T
KINSELLA	8	1562 W	1908	SRC	GTP	CPR	I
KINUSO	2.	4932 CD	1919	BFM	EDBC	EDBC	L*
KITSCOTY	4	2028 P	1906	ASW	CNOR	MMC	I
LAC LA BICHE	36	4313 BF	1915	SK	AGW	AGW	T
LAC ST.ANNE	24	6686 AR	1913	CCF	CNOR	CNTP	G
LACOMBE	7	I	1895	JLD	CE	CPR/NM/P	A
LAMONT	4	6700 U	1908	ASW	CNOR	MMC/P	X

LAMONT	2	LXXV	1906	AD	NO	PRIVATE	G
LAVOY	6	949 Q	1906	ASW	CNOR	MMC/P	I
LEDUC	8	T4	1901	RWL	CPR	PRIVATE	A
LEDUC	6	T1	1898	JLD	CPR	CPR	A
LEGAL	6	7467 BA	1914	JLC	NO	PRIVATE	L
LEGAL	8	1695 CL	1922	AJT	NO	PRIVATE	L
LEGAL	8	7710 U	1908	JLC	NO	RC	L
LEGAL	8	1273 BE	1914	HWG	NO	PRIVATE	L
LESLIEVILLE	3	4815 AV	1913	HPK	CNOW	MMC	L•
LESLIEVILLE	2	4142 AS	1913	HPK	CNOW	MMC	L•
LESSER SLAVE	40	1904 V	1900	JLC	NO	REVILLON	G
LINDBERGH	2	1336 EO	1929	JEG	CNR	PRIVATE	T
LISBURN	1	4258 CL	1925	JEG	CNOR	CNTP	L•
LLOYDMINSTER	1	8140 V	1908	ASW	CNOR	PRIVATE	X
LLOYDMINSTER	12	LXXXVI	1906	ASW	CNOR	MMC	F
LOOMA	0	2659 CL	1923	WD	CNOR	CNOR	L•
LOUGHEED	8	LXIX	1906	AT	CE	CPR	T
MAGNOLIA	2	7370 BK	1916	JHB	CNOR	CNTP/P	T
MANNVILLE	35	2574 P	1906	AD	CNOR	PRIVATE	X
MANNVILLE	4	LXXXVII	1906	ASW	CNOR	MMC	T
MANOLA	2	5468 CL	1927	HER	PVR	PRIVATE	Y
MARKERVILLE	4	XXI	1904	AM	NO	PRIVATE	A
MARLBORO	9	7433 AN	1913	SK	NO	EDMPOCEM	C
MARWAYNE	2	5426 CL	1927	DTT	CPR	CPR	T
MAYERTHORPE	6	373 CL	1921	BFM	CNR	PRIVATE	I
MEANOOK	2	1623 CA	1919	ASW	CNOR	CNTP	I
MEETING CREEK	4	5614 AF	1911	ASW	CNOR	MMC	I
METISKOW	4	5001 AC	1911	ERB	CPR	CPR	T
MILLET	1	314 BG	1914	HLS	CE	NM	L•
MILLET	2	XVa	1902	APP	CE	NM	L•
MILLET	2	XV	1901	APP	CE	NM	L•
MINBURN	4	6100 R	1907	ASW	CNOR	MMC	I
MINTLAW	4	4216 AZ	1914	DTT	ACR	CPR	T
MIRROR	109	7159 AI	1912	JEG	GTP	GTP	F
MONITOR	4	3708 AP	1913	DTT	CPR	CPR	T
MORELAMBE	2	758 EO	1928	DTT	CPR	CPR	I
MORINVILLE	4	7731 R	1907	ASW	CNOR	MMC	I
MORINVILLE	4	VIII	1899	JS	NO	PRIVATE	L
MORNINGSIDE	4	XVIII	1903	APP	CE	CPR	L•
MUNDARE	4	LXXXVIII	1906	ASW	CNOR	MMC	I
MUSIDORA	2	1275 EO	1929	DTT	CPR	CPR	L•
MYRNAM	2	668 EO	1928	DTT	CPR	CPR	L•
McLAUGHLIN	5	2129 EO	1930	DTT	CPR	CPR	T
McLENNAN	19	2810 BF	1915	DFM	EDBC	EDBC	I
NAMPA	2	2135 EO	1930	CBA	CCR	PRIVATE	I
NESTOW	2	6316 AT	1913	ASW	CNOR	MMC	I
NEVIS	6	LXVIII	1906	AT	CE	CPR	T
NEW NORWAY	12	2854 Z	1909	AD	GTP	PRIVATE	T
NEW SAREPTA	22	578 CL	1921	ASW	CNOR	CNTP	I
NEW SAREPTA	2	4629 BG	1915	HPK	CNOR	PRIVATE	T
NEWBROOK	1	2588 ET	1938	CBA	NO	PRIVATE	L
NORMA	2	3298 ET	1940	DTT	CPR	CPR	L•
NORTHSTAR	2	2879 ET	1938	CBA	NO	PRIVATE	I
OHATON	6	LVI	1906	AT	CE	CPR/PRI	T
ONOWAY	4	6288 BZ	1919	CCF	CNR	CNTP	I
OWLSEYE	2	867 CL	1921	RHC	CNR	CNTP	I
PARADISE VALL	8	1982 EO	1930	DTT	CPR	CPR	T
PEACE RIVER	14	5985 AW	1913	HPK	NO	LAND CO	L
PEACE RIVER	20	3735 AX	1914	JHJ	NO	PRIVATE	G
PEERS	2	749 CL	1921	AD	NO	PRIVATE	L
PENHOLD	3	2056 Q	1906	BJS	CE	NM	L•
PENHOLD	2	XXVI-A	1903	APP	CE	NM	L•
PERRYVALE	2	2199 EO	1930	HER	CNR	PRIVATE	T
PICARDVILLE	1	5769 CL	1927	HER	NO	PRIVATE	L•
PLAMONDON	1	3607 ET	1940	ECB	NO	PRIVATE	G
PONOKA	2	VII	1899	JLD	CE	HBC	L•
PROVOST	8	77 U	1907	ERB	CPR	CPR	T
RADWAY	4	3467 CE	1920	ASW	CNR	CLIC	I
RANFURLY	3	3459 Q	1906	ASW	CNOR	MMC	I
RED DEER	8	H	1891	GBB	CE	NM	T
RED DEER	6	K-9	1905	AEF	CE	PRIVATE	C
RED WILLOW	8	171 AE	1911	ASW	CNOR	MMC	I
REDWATER	2	1544 CL	1922	JHB	CNR	CNRL	T
RIMBEY	2	148 BT	1919	RHC	NO	PRIVATE	L
RIMBEY	3	1962 CJ	1920	RPB	LNWR	PRIVATE	A

RIMBEY	6	6268 CE	1920	OI	LNWR	LNWR/PRI	A
RIVIERE QUI B	1	LXXVIII	1906	AD	NO	PRIVATE	L
ROCHESTER	2	5619 BK	1916	ASW	CNOR	CNTP	I
ROCHFORT	4	6 CL	1920	ASW	CNOR	CLIC	I
ROCKY MTN. HOU	32	101 AJ	1912	CCF	ACR	PRIVATE	F
ROSALIND	2	5819 BK	1916	ASW	CNOR	MMC	T
ROUNDHILL	4	8080 AF	1911	ASW	CNOR	MMC	T
ROUNDHILL	2	1205 EO	1929	DTT	CPR	CPR	L
ROYAL PARK	4	2110 U	1908	RCL	CNOR	MMC	I
RYCROFT	3	3892 CL	1925	DFM	EDBC	PRIVATE	T
RYLEY	10	6530 V	1908	SRC	GTP	GTPTDC	I
SANGUDO	6	6967 BG	1916	JHB	CNOR	CNTP	T
SEDGEWICK	16	3825 P	1906	AT	CE	CPR	T
SEXSMITH	4	1623 BQ	1916	JHS	EDBC	PRIVATE	L•
SLAVE LAKE	3	1794 ET	1936	JHJ	NAR	GOV	I
SMOKY LAKE	8	803 CL	1921	ASW	CNOR	CNTP/PRI	I
SPEDDEN	1	1955 CR	1923	JHB	CNOR	CNOR	I
SPIRIT RIVER	4	7059 BD	1915	AJT	EDBC	EDBC	I
SPIRIT RIVER	6	7056 AP	1913	HPK	NO	REVILLON	G
SPRUCE GROVE	4	2387 AC	1913	ECB	GTP	GTPDC	F
ST. ALBERT	6	G-1	1901	AD	NO	PRIVATE	G
ST. PAUL	21	7632 AE	1911	MWH	NO	PRIVATE	G
ST. PAUL	15	4621 AX	1914	WMC	NO	RC	G
ST. PAUL	8	1038 CL	1921	RHC	CNOR	CNOR/RC	G
ST. PAUL	8	4751 BF	1915	JLC	NO	RC	G
ST. PAUL	4	2945 AD	1910	JLC	NO	RC	G
ST. PAUL	2	1375 AE	1911	JLC	NO	RC	G
ST. PAUL	4	1690 AB	1910	JLC	NO	RC	G
STAR	2	1174 EO	1929	AD	CPR	PRIVATE	L•
STETTLER	8	LIV	1906	AT	CE	CPR	T
STONY PLAIN	20	4180 R	1907	RWC	EYP	MMC	I
STROME	8	LXVII	1906	AT	CE	CPR	T
SUNNYBROOK	3	2719 EO	1930	DTT	CPR	CPR	L•
SYLVAN LAKE	4	LXXXI	1906	AEF	NO	PRIVATE	C
SYLVAN LAKE	4	3558 Q	1907	AEF	NO	PRIVATE	C
TEES	6	XXIX	1904	AT	CE	CPR	T
THERIEN	1	543 EO	1928	MWH	NO	PRIVATE	L
THERIEN	1	853 EO	1928	MWH	NAR	PRIVATE	L•
THORHILD	2	5666 CG	1920	AD	NO	PRIVATE	L
THORSBY	3	1828 EO	1929	DTT	LNWR	CPR	L•
TOFIELD	16	9200 S	1907	AD	GTP	GTPTDC	I
TWO HILLS	2	709 EO	1928	DTT	CPR	CPR	T
TWO HILLS	2	1442 EO	1929	DTT	CPR	CPR	L•
UNCAS	4	6099 AT	1913	SK	NO	LAND CO	G
VEGREVILLE	9	LXVI	1906	ASW	CNOR	MMC	I
VEGREVILLE	40	LXXX	1906	AD	CNOR	PRIVATE	X
VERMILLION	12	5766 AY	1914	ASW	CNOR	CNTP	C
VERMILLION	20	6647 S	1907	ASW	CNOR	MMC	F
VETERAN	4	585 AJ	1912	DTT	CPR	CPR	L•
VETERAN	4	983 AY	1914	DTT	CPR	CPR	L•
VICTORIA STMT	0	5011 CE	1920	AD	NO	HBC	RL
VIKING	16	1174 W	1908	SRC	GTP	GTPTDC	I
VILLENEUVE	1	7711 U	1908	JLC	NO	RC	L
VILLENEUVE	1	323 CF	1919	JLC	NO	PRIVATE	L
VILNA	2	1022 CL	1921	JHB	CNR	CNR	I
VIMY	4	2431 CL	1923	DTT	CPR	CPR	I
WABAMUN	8	4956 AR	1913	ECB	GTP	GTPDC	C
WABAMUN	4	3682 AJ	1912	RK	GTP	PRIVATE	C
WABAMUN	4	5680 AC	1911	TWB	GTP	GTPDC	I
WAINWRIGHT	36	6445 V	1908	SRC	GTP	GTPDC	I
WANHAM	1	406 ET	1933	CBA	NO	PRIVATE	L
WARBURG	2	2478 EO	1930	DTT	CPR	CPR	L•
WARSPITE	2	716 CL	1921	ASW	CNOR	CNTP	I
WASKATENAU	2	4934 CD	1919	ASW	CNOR	CNTP	I
WEMBLY	2	3255 CL	1924	WGM	EDBC	EDBC	L•
WESTLOCK	16	7432 AV	1913	SK	EDBC	PRIVATE	X
WETASKIWIN	8	M	1892	RJJ	CE	NM	X
WHITECOURT	4	662 CL	1921	ASW	CNR	CNTP	I
WHITELAW	4	3598 CL	1924	WGM	CCR	PRIVATE	L•
WIDEWATER	3	1864 ET	1936	RHC	NAR	PRIVATE	T
WILDWOOD	3	6862 AN	1913	ECB	GTP	GTPDC/GOV	F
WILLINGDON	5	380 EO	1928	DTT	CPR	CPR	F
WINFIELD	2	5486 CL	1927	AD	LNWR	LNWR	L•
WOLF CREEK	4	1035 AR	1913	ECB	GTP	GTPDC	T
WOSTOK	2	1064 EO	1929	DTT	CPR	CPR	T

Appendix 1

Southern Alberta:
Inventory of Town Plans in Alberta

LOCATION	BLK	PLAN NO.	YEAR	SURVEYOR	TRAIN CO.	OWNER	FORM TYPE
ACADIA VALLEY	2	6630 DR	1927	ASW	CNR	CNR	I
ACME	8	2315 AB	1910	DTT	CPR	CPR	L•
AETNA	20	5652 BD	1915	JFH	NO	PRIVATE	M
AIRDRIE	4	4445 K	1905	HHM	NO	PRIVATE	L
AIRDRIE	1	1522 N	1906	APP	NO	PRIVATE	L
ALDERSYDE	4	2446 S	1907	--	CPR	CPR	T
ALLINGHAM	2	3251 EI	1931	DTT	CPR	CPR	A
ALTARIO	3	1501 BA	1914	DTT	CPR	CPR	T
ARROWWOOD	4	1738 DM	1925	DTT	CPR	CPR	L•
BAINTREE	2	832 CN	1920	ASW	CNOR	CNTP	I
BANFF	100	6719 BC	1914	W/D	CPR	GOV	C
BARNWELL	1	3105 Y	1909	JFH	CPR	PRIVATE	I
BARNWELL	2	5841 EG	1931	WME	CPR	IRR	I
BARONS	8	2605 X	1909	DTT	CPR	CPR	L•
BASSANO	36	4437 AD	1910	RK	CPR	CO	L•
BASSANO	19	8155 AS	1913	HHM	CPR	CO	X
BASSANO	2	1874 K	1904	JJD	CPR	CPR/IRR	L•
BEAVER MINES	16	7850 AL	1912	JEW	CPR	WCC/COAL	A
BEAZER	12	890 AU	1913	AWP	NO	PRIVATE	G
BEISEKER	6	4011 X	1909	WP	CPR	CPR	L•
BELLEVUE/HILL	4	6177 Y	1909	JEW	CPR	HCOAL	L
BINDLOSS	4	7142 AW	1914	DTT	CPR	CPR	T
BLACK DIAMOND	9	2298 DR	1927	APP	NO	PRIVATE	G
BLACK DIAMOND	5	5503 EH	1931	HJD	NO	PRIVATE	L
BLACKIE	6	6980 AC	1911	DTT	CPR	CPR	L•
BLAIRMORE	19	3380 T	1908	JEW	CPR	PRIVATE	M
BLAIRMORE	0	2933 AA	1910	JEW	CPR	PRIVATE	M
BLAIRMORE	0	6050 L	1906	JEW	CPR	PRIVATE	M
BLAIRMORE	22	3319 I	1902	AWM	CPR	--	F
BOW ISLAND	17	186 AA	1910	JFH	CPR	PRIVATE	A
BOW ISLAND	15	5800 S	1908	WHY	CPR	PRIVATE	A
BOW ISLAND	12	1783 AI	1911	JFH	CPR	PRIVATE	A
BOWDEN	3	5507 N	1906	BJS	CE	NM	L•
BOWDEN	3	1905 H	1900	APP	CE	NM	L•
BOWDEN	2	3942 J	1904	APP	CE	NM	L•
BOWELL	6	465 M	1906	AWM	NO	PRIVATE	G
BRAGG CREEK	2	8556 CI	1920	JS	NO	PRIVATE	L
BRANT	8	6988 AG	1911	DTT	CPR	CPR	F
BROOKS	2	45 O	1906	--	CPR	CPR	L•
BUFFALO	4	1345 BA	1914	DTT	CPR	CPR	T
BURDETT	35	248 A	1908	--	CPR	PRIVATE	T
BURMIS	6	3688 AE	1911	JEW	CPR	DCC/COAL	A
BURMIS	2	5510 AL	1912	DTT	CPR	CELC/NM	T
CANMORE	4	303 E	1892	WAD	CPR	SC	L•
CARBON	21	4387 P	1907	APP	NO	COAL CO	G
CARDSTON	20	4937 I	1903	AWM	NO	PRIVATE	M
CARDSTON	36	1793 E	1893	CAM	NO	PRIVATE	M
CARDSTON	20	2247 G	1898	JS	NO	PRIVATE	M
CARDSTON	20	1431 H	1900	JS	NO	PRIVATE	M
CARMANGAY	18	570 X	1909	DTT	CPR	CPR	X
CARSELAND	8	4610 AV	1913	DTT	CPR	CPR	L•
CARSTAIRS	2	2663 H	1900	JLD	CE	N	X
CASSILS	3	8709 CH	1920	DTT	CPR	CPR	T
CAYLEY	2	2326 P	1907	APP	CE	N	L•
CAYLEY	2	960 J	1903	APP	CE	N	L•
CEREAL	7	2686 BC	1914	ASW	CNOR	CNTP/MMC	X
CHAMPION	8	6995 AG	1911	DTT	CPR	CPR	L•
CHANCELLOR	4	550 AM	1912	CMH	CPR	CPR/IRR	T
CHEADLE	4	754 N	1906	WP	CPR	CPR	L•
CHIN	8	899 AA	1910	DTT	CPR	ARIC	L•
CHINOOK	7	2231 BA	1914	ASW	CNOR	CNTP/MMC	I
CLARESHOLM	131	147 M	1905	APP	CPR	PRIVATE	F
CLUNY	10	2124 U	1908	WP	CPR	CPR	L•
COALDALE	24	6476 AA	1910	AWM	CPR	PRIVATE	A
COALHURST	6	2605 AL	1912	JEW	CPR	COAL CO	G
COCHRANE	2	3761 X	1909	JLD	CPR	CPR	X

COCHRANE	2	2174 H	1900	JLD	CPR	CPR	L•
COLEMAN	0	2446 AA	1910	JEW	CPR	ICCOAL	M
COLEMAN	38	820 L	1905	AWP	CPR	ICCOAL	M
COLEMAN	20	232 AI	1911	JEW	CPR	ICCOAL	M
COMPEER	12	1335 BA	1914	DTT	CPR	CPR	T
CONRICH	5	7130 AP	1912	EH	GTP	GTPDC	T
COUNTESS	2	1786 BA	1914	DTT	CPR	CPR	T
COUTTS	6	204 BD	1914	DTT	CPR	ARCC	L•
COUTTS	6	36 EG	1930	EWT	CPR	ARCC	A
COWLEY	4	1559 I	1902	JLD	CPR	CPR	L•
COWLEY	3	350 AQ	1912	HLS	CPR	N	A
CRAIGMYLE	2	7030 AW	1914	ASW	CNOR	MMC	I
CREMONA	2	6489 EG	1931	DTT	CPR	CPR	L•
CROSSFIELD	6	4504 I	1902	--	CE	--	L•
DALEMEAD	4	2014 BA	1914	DTT	CPR	CPR	L•
DALROY	5	2166 W	1909	WP	CPR	CPR	L•
DE WINTON	3	1153 P	1907	APP	CE	PRIVATE	L•
DELACOUR	20	4333 AV	1913	JME	GTP	PRIVATE	A
DELIA	4	545 AY	1914	ASW	CNOR	MMC	I
DIAMOND CITY	8	705 AA	1910	APP	CPR	DCOAL	A
DIDSBURY	2	1427 H	1900	APP	CE	NM	L•
DRUMHELLER	6	3099 AD	1910	LFH	CNOR	PRIVATE	A
DUCHESS	4	1868 BA	1914	DTT	CPR	CPR	T
DUNMORE	3	4576 B	1889	EAM	CPR	NWCOAL	F
EAST COULEE	7	3815 EC	1929	WE	CPR	MUCOAL	L•
EMPRESS	32	5043 AV	1913	DTT	CPR	CPR	F
ENCHANT	4	438 BD	1914	DTT	CPR	CPR	T
ENDIANG	2	4374 DN	1926	JHB	CNR	CNR	I
ETZICOM	4	6842 BI	1915	DTT	CPR	CPR	T
EXCEL	4	2693 BC	1914	ASW	CNOR	CNTP	I
FARROW	3	1343 EH	1930	DTT	CPR	CPR	T
FOREMOST	10	5317 AU	1913	WME	CPR	CPR	T
FRANK	4	2609 BD	1914	JEW	CPR	CACOAL	M
FRANK	4	3661 I	1902	JEW	CPR	CACOAL	M
FT. MACLEOD	216	92B	1888	AWM	NO	GOV	G
GLENWOOD	31	1222AY	1914	JEW	NO	MORMAN	M
GRAINGER	4	990 AD	1912	JEG	GTPDC	GTP	I
GRANUM	3	961J	1903	APP	CE	PRIVATE	L•
GRASSY LAKE	36	4555S	1908	AWM	CPR	PRIVATE	X
GRASSY LAKE	34	4466AA	1910	JFH	CPR	PRIVATE	T
HANNA	46	6133AW	1914	ASW	CNOR	MMC	F
HARDIEVILLE	12	2697Y	1909	WHY	NO	PRIVATE	G
HARTELL	3	3568EE	1930	HJD	NO	PRIVATE	L
HERRONTON	3	494EG	1930	DDT	CPR	CPR	T
HIGH RIVER	13	2245E	1893	GBB	CE	PRIVATE	X
HILDA	4	6086DD	1923	DTT	CPR	CPR	I
HILLSPRING	25	370BD	1914	JEW	NO	MORMON	M
HILLSPRING	22	1002EJ	1930	JFH	NO	MORMON	M
HUSSAR	10	6780AM	1912	CMH	CPR	CPRI	T
HUXLEY	4	6680AP	1912	EH	GTP	PRIVATE	T
IDDESLEIGH	4	1708BA	1914	DTT	CPR	CPR	T
INDUS	2	6341AV	1913	DTT	CPR	CPR	L•
IRRIGANA	14	5087W	1909	WP	CPR	CPR	L•
IRVINE	4	4226 B	1904	JLD	CPR	CPR/PRI	L•
IRVINE	3	3130B	1904	EJB	CPR	CPR/PRI	L•
JENNER	14	1860BA	1914	DTT	CPR	CPR	F
KEOMA	4	642X	1909	WP	CPR	CPR	L•
KIMBALL	8	928J	1903	RGG	NO	PRIVATE	M
KIRKCALDY	2	7272AG	1911	DTT	CPR	CPR	L•
KIRRIEMUIR	8	2689BC	1914	DTT	CPR	CPR	T
LANGDON	10	1562N	1906	WP	CPR	CPR	X
LEAVITT	1	319AY	1914	WME	NO	PRIVATE	M
LEGEND	4	6764 AU	1913	HFM	CPR	CPR	T
LETHBRIDGE	36	4353 S	1908	CAM	CPR	ARIC	F
LETHBRIDGE	130	66 A	1885	MA	NWNCC	NWNCC	F
LOMOND	4	918 AY	1914	DTT	CPR	CPR	T
LUNDBRECK	16	2177 S	1907	JEW	CPR	COALCO	A
MADDEN	1	2392 EI	1931	RVH	CPR	PRIVATE	A
MAGRATH	35	3046H	1901	CAM	NO	MORMON	M
MAGRATH	62	3985J	1904	RJG	SMRR	--	M
MAGRATH	0	6318ER	1933	WME	ARICR	ARICR	M
MAKEPIECE	8	530AM	1912	JSD	CPR	CPR	T
MANYBERRIES	8	7345BO	1916	DTT	CPR	CPR	T
MAPLELEAF	2	706Y	1909	JEW	CPR	PRIVATE	A
MEDICINE HAT	16	1491 1DB	1888	LAH	CPR	CPR	X

MICHICHI	3	2232 BA	1914	ASW	CNOR	CNTP	I
MIDNAPORE	8	3062S	1908	HHM	CPR	PRIVATE	L•
MIDNAPORE	2	8115AP	1913	DTT	CPR	CPR	L•
MILK RIVER	10	2272 Y	1909	WHY	ARICR	ARIC	T
MILO	2	2930 DM	1925	DTT	CPR	CPR	T
MONARCH	12	136A	1908	--	CE	--	F
MORRIN	2	4945AP	1912	ASW	CNOR	MMC	G
MORRIN	2	4110AJ	1911	GBB	CNOR	MMC	I
MOSS LEIGH	5	8011EF	1930	DTT	CPR	CPR	T
MOUNTAIN VIEW	26	5035L	1906	AWP	NO	PRIVATE	G
MUNSON	4	6950AH	1911	GBB	NO	MMC	I
NACMINE	5	7125 DD	1923	CBA	NO	NAMCOAL	G
NACMINE	5	7125DD	1923	CBA	CPR	COAL CO.	L•
NAMAKA	4	3404U	1908	WP	CPR	CPR	L•
NAMARA	3	50AP	1912	FJH	CPR	PRIVATE	A
NANTON	4	4362I	1902	--	CE	--	L•
NAPTHA	4	2158EF	1930	RG	NO	PRIVATE	L
NEMISKAM	5	6841BI	1915	DTT	CPR	CPR	T
NEW BRIGDEN	5	4557 DO	1926	ECB	CNR	CNR	I
NEWBRIGDEN	6	455700	1926	ECB	CNOR	CNR	I
NEWDAYTON	3	2324	1907	WM	ARICR	ARIC	L•
NOBLEFORD	8	4888AB	1910	DTT	CPR	CPR	T
OKOTOKS	19	1650E	1893	--	CE	PRIVATE	A
OLDS	5	868E	1892	GBB	CE	NM	X
OLDS	6	472I	1901	APP	CE	NM	L•
ORION	3	7415BO	1916	DTT	CPR	CPR	L•
OYEN	4	4490AR	1913	ASW	CNOR	MMC	I
PAKOWKI	3	7223 BI	1915	DTT	CPR	CPR	T
PARKLAND	51	5659 X	1910	APP	CE	LAND CO	A
PASSBURG	28	185 AA	1910	AWM	CPR	COAL CO	A
PATRICIA	4	1217 BA	1914	DTT	CPR	CPR	T
PICTURE BUTTE	3	6764 DI	1926	PMS	CPR	PRIVATE	L•
PINCHER CREEK	20	460 B	1889	GEM	NO	PRIVATE	G
PINCHER STATI	35	1993 N	1906	--	CPR	--	A
PRINCESS	4	2013 BA	1914	DTT	CPR	CPR	T
PURPLE SPRING	26	6890 AL	1912	JFH	CPR	PRIVATE	A
QUEENSTOWN	4	7780 DL	1925	RYH	CPR	PRIVATE	L•
RAINIER	2	4112 EA	1928	DTT	CPR	CPR	L•
RAYMOND	76	2039 I	1902	CAM	ARCC	COAL CO	C
REDCLIFF	146	1117 V	1909	HHM	CPR	PRIVATE	A
ROCKYFORD	5	5728 CC	1918	ASW	CNOR	CNTP	I
ROSEBUD	3	6742 BQ	1917	ASW	CNOR	CLIC	I
ROSEDALE	11	4676 CH	1919	HHM	NO	PRIVATE	I
ROSEMARY	4	988 BA	1914	DTT	CPR	CPR	T
ROWLEY	2	2970 AH	1911	GBB	CNOR	MMC	I
RUMSEY	2	2975 AH	1911	GBB	CNOR	MMC	I
SCANDIA	2	4111 EA	1928	DTT	CPR	CPR	T
SCAPA	2	8731 DL	1926	JHB	CNR	CNR	I
SCHULER	4	6085 DD	1923	DTT	CPR	CPR	T
SEDALIA	2	2887 DN	1926	ECB	CNR	CNR	I
SEVEN PERSONS	3	610 W	1909	AWM	CPR	PRIVATE	L•
SHAUGHNESSY	4	8183EA	1929	PMS	NO	PRIVATE	G
SHEERNESS	2	3768CN	1920	ASW	CNOR	CNOR	I
SHEERNESS	5	5092AV	1913	SKP	NO	PRIVATE	L
SHEPARD	10	4729C	1906	ACT	CPR		L•
SHOULDICE	2	5894DM	1925	DTT	CPR	CPR	L•
SIBBALD	2	5039AV	1913	ASW	CNOR	MMC	I
SIBBALD	0	3569BN	1916	ASW	CNOR	CNTP	I
SKIFF	4	8569AV	1914	HFM	CPR	CPR	L•
SPRING COULEE	22	604AE	1910	WHY	ARIR	PRIVATE	G
SPRING COULEE	12	5460AA	1910	WHY	ARIR	PRIVATE	G
STANDARD	12	2540AM	1912	JSD	CPR	CPRI	T
STANMORE	0	5041AV	1913	ASW	CNOR	MMC	I
STAVELY	0	1223J	1903	APP	CE	N	A
STIRLING	53	752J	--	AJG	ARCC	PRIVATE	M
STRATHMORE	3	2461K	1905	JSD	CPR	CPR	L•
SUFFIELD	79	200AJ	1911	JS	CPR	PRIVATE	X
SUNDRE	3	7447ER	1938	HJD	NO	PRIVATE	L
SWALWELL	10	5050AK	1912	JME	GTP	GTPDC	I
TABER	14	5638L	1906	RCG	NO	PRIVATE	A
TABER	0	4348R	1907	AWM	CPR	LAND CO	M
TABER	14	6390L	1906	AWM	CPR	PRIVATE	X
THREE HILLS	0	4304AH	1911	APP	GTP	PRIVATE	A
THREE HILLS	16	5035T	1908	ACT	NO	PRIVATE	G
TILLEY	12	6336EF	1911	WP	CPR	CPR	I

TORRINGTON	4	4127EH	1931	DTT	CPR	CPR	I
TRAVERS	8	927AY	1914	DTT	CPR	CPR	T
TROCHU	17	8210AK	1912	JEG	GTP	GTPDC	I
TROCHU	10	492S	1907	JLC	NO	STANNE R	L
TURIN	5	104 DS	1927	WE	CPR	PRIVATE	L•
TURNERVALLEY	2	2474 DN	1926	RVH	NO	PRIVATE	L
VAUXHALL	24	760 CM	1919	JS	CPR	CLIRRC	I
VULCAN	8	7000 AG	1911	DTT	CPR	CPR	L•
WALSH	12	3644 B	1904	APP	CPR	PRIVATE	L•
WARNER	20	4068 N	1906	AWM	ARCC	PRIVATE	A
WHITLA	4	191 AC	1911	JFH	CPR	PRIVATE	L•
WIMBORNE	3	7015 EF	1930	DTT	CPR	CPR	I
WINNIFRED	10	60 AA	1910	JFH	CPR	PRIVATE	A
WRENTHAM	4	7677 AQ	1913	HFM	CPR	CPR	L•
YOUNGSTOWN	12	7490 AP	1912	ASW	CNOR	MMC	I

Appendix II: GTP Standard Form Showing Restrictions.
Source: PAC, RG 30, GTP Correspondence 11617 A-27, 1908.

This Standard Form was used as an Application to Purchase Town Lots. The restrictions noted were as follows:

1. No livery stable or blacksmith's shop to be placed on the noted lots.

2. No hotel without consent.

3. To place on each lot a building to cost not less than $1000.00 and to have same erected within one year, conforming with the Company's regulations as to street line and grade line.

Appendix III Form Definitions

Appendix III contains illustrations of each urban form identified by this thesis. These plans were removed due to problems in microfilming reproduction. The appropriate plan numbers for plans, registered at the Alberta Land Titles Office, are noted at the end of each form definition.

Angular (A) - The angular town form takes its alignment from the section line rather than the railway line. The Main Street meets the railway at an angle resulting in triangular blocks. Usually some realignment occurs to correct the plan to a grid shape. The triangular blocks form the commercial area and often a secondary street enters the Main Street at right angles. This street also developed as part of the commercial area.
Source: Lacombe, Plan I, 1895, J.L. Doupe.

Crossing (X) - The crossing plan contains a Main Street which crosses the railway tracks. Development occurs on both sides of the tracks. Commercial lots either face the rail line or more often are symmetrically distributed along the Main Street. The problem of adequate crossings and their inherent safety rendered this plan unpopular by 1900.
Source: Medicine Hat, Plan 1491, 1888, L.A. Hamilton

Railway Linear (L*) - The linear form follows the line of the railway. The commercial lots front or face the rail line while residential lots developed behind. This plan presented a larger commercial area to the travelling public than was in reality.
Source: Millet, Plan XV, 1901, A.P. Patrick.

T-plan (T) - The T-plan developed from the desire of the railway company to eliminate crossings within the townsite. The form takes its name from the intersection at right angles on Main Street with Railway Avenue. Commercial lots were located on both streets. Main Street dimensions were usually 80 to 100 feet in keeping with contemporary perceptions of wide avenues adding to the beauty and imposing nature of the townsite.
Source: Erskine, Plan LXX, 1906, A. Taylor.

T-plan variation (F) - This variation contains a principal commercial street at the first intersection along Main Street. This variation produced a larger business district with more corner properties to draw businesses.
Source: Coronation, Plan 8149AH, 1912, D.T. Townsend.

I-plan (I) - The I-plan has the Main Street at right angles to the rail lines but with no commercial lots facing the rail line. The Main Street was usually 80 to 100 feet wide. Often the Main Street terminated at the depot and thus the station provided the visual focus for the community.
Source: Chauvin, Plan 4835 W, 1909, S.R. Crerar.

C-plan (C) - The C-plan was created in order to note those plans which did not conform to the grid. They contained curved streets, parkland, and a sensitivity to terrain.
Source: Marlboro, Plan 7433 AN, 1913, S. Knight.

Simple Linear plan (L) - This linear form follows the road alignment. This form was usually small, compact and does not always differentiate between commercial and residential land uses.
Source: Calmar, Plan 4250 EO, 1931, C.B. Atkins.

Simple grid plan (G) - The G-plan denotes the simple grid subdivisions which were not railway dependent. The subdivisions were large with no lot differentiation, functional differentiation, or predetermined Main Street.
Source: Ft. Macleod, Plan 92B, 1888, A.W. McVittie.

Mormon Block (M) - The Mormon Block takes its name from the use of the square block subdivision used by the LDS. Square blocks, wide streets, park space and church site are noted in the plan. Differentiation between commercial, residential and agricultural land uses was also a common feature of these plans.
Source: Cardston, Plan 1793 E, 1893, C.A. Magrath.